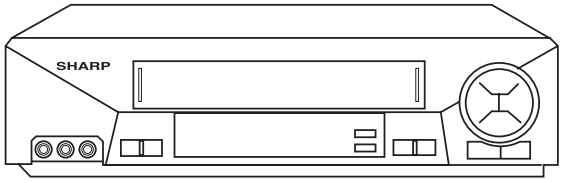
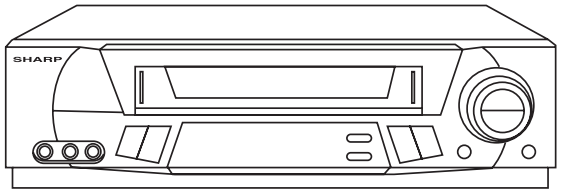
SHARP SERVICE MANUAL

S39D6VC-A598U



(VC-A598U/H995U/H996U/H997U)



(VC-H9977U/H998U)

VHS VIDEO CASSETTE RECORDER

MODELS VC-A598U/H995U/H996U/H997U/H9977U/H998U

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

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VC-A598U/H995U/H996U/H998U ..... Models for U.S.A.
VC-H997U/H9977U/H998U ..... Models for CANADA

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

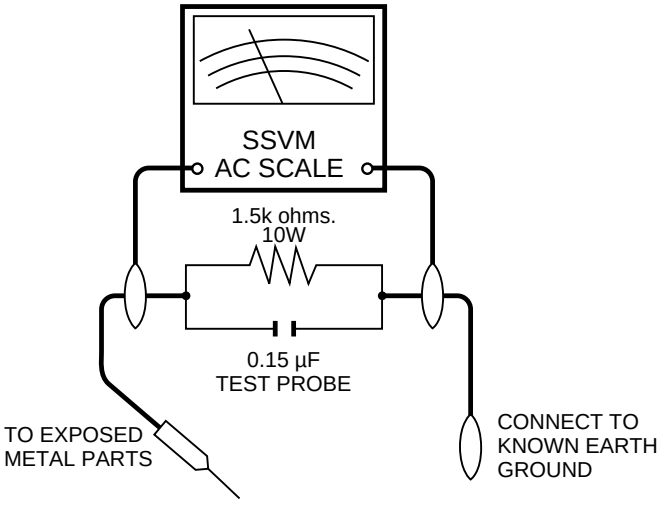
IMPORTANT SERVICE NOTES

BEFORE RETURNING THE VIDEO CASSETTE RECORDER

Before returning the video cassette recorder to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the video cassette recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for current in the following manner.

- Plug the AC line cord directly into a 120 volt AC outlet (Do not use an isolation transformer for this test).
- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15µF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit.
- Use an SSVM or VOM with 1000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor (See Diagram).
- Move the resistor connection to earth exposed metal part having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, etc.) and measure the AC voltage drop across the resistor. Reverse the AC plug on the set and repeat AC voltage measurements for each exposed part. Any reading of 0.45V rms (this corresponds to 0.3mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the video cassette recorder to the owner.



WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.

This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

CAUTION:

3.0A 125V

This symbol mark means fast operating fuse.
For continued protection against risk of fire, replace only with same type fuse F901 (3.0A, 125V).

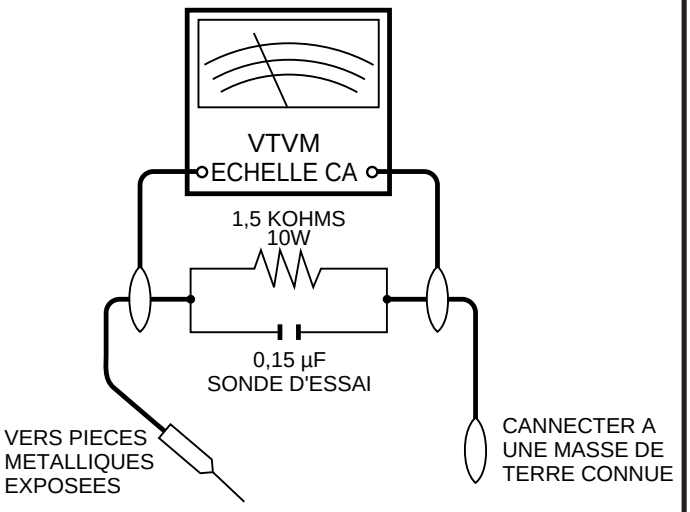
NOTES DE SERVICE IMPORTANTES

AVANT DE RENDRE LE MAGNETOSCOPE

Avant de rendre le magnétoscope à l'utilisateur, effectuer les vérifications de sécurité suivantes.

1. Vérifier toutes les gaines de fil pour être sûr que les fils ne sont pas pincés ou que le matériel n'est pas coincé entre le châssis et les autres pièces métalliques dans le magnétoscope.
2. Vérifier tous les dispositifs de protection tels que les boutons de commande non métalliques, les matériaux d'isolement, le dos du coffret, les couvercles de compartiment et ajustement ou les boucliers, les réseaux de résistance / condensateur d'isolement, les isolateurs mécaniques, etc.
3. Pour être sûr qu'il n'y a aucun risque de choc électrique, vérifier le courant de fuite de la maniére suivante.

- Brancher le cordon d'alimentation secteur directement dans une prise de courant de 120 volts. (Ne pas utiliser de transformateur d'isolement pour cet essai).
- Utiliser deux fils à pinces et connecter une résistance de 10 watts 1,5 kohm en parallèle avec un condensateur de 0,15 µF en série avec des pièces du coffret métallique exposées et une masse de terre connue telle qu'un tuyau ou un conduit d'eau.
- Utiliser un VTVM ou VOM avec une sensibilité de 1000 ohms par volt ou plus ou mesurer la chute de tension CA entre la résistance (voir diagramme).
- Déposer la connexion de la résistance à toutes les pièces métalliques exposées ayant un parcours de retour au châssis (connexions d'antenne, coffret métallique, têtes de vis, boutons et arbres de commande, etc.) et mesurer la chute de tension CA entre la résistance. Inverser la fiche CA (une fiche intermédiaire non polarisée doit être utilisée à seule fin de faire ces vérifications.) sur l'appareil et répéter les mesures de tension CA pour chaque piéce métallique exposée. Toute lecture de 0,45 Vrms (ceci correspond à 0,3 mArms CA) ou plus est excessive et signale un danger de choc qui doit être corrigé avant de rendre le magnétoscope à son utilisateur.



ATTENTION: POUR REDUIRE LES RESQUES D'INCENDIE OU DE CHOC ELECTRIQUE, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.

ATTENTION

RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR

ATTENTION: AFIN DE REDUIRE LES RISQUES DE CHOC ELECTRIQUE, NE PAS RETIRER LE COUVERCLE, AUCUN ORGANE INTERNE NE PEUT ETRE REPARE PAR L'UTILISATEUR. CONFIER L'APPAREIL A UN DEPANNEUR QUALIFIE.

Ce symbole signale à l'utilisateur la présence d'une tension non isolée à l'intérieur de l'appareil qui peut être la cause de secousses électriques dangereuses.

Ce symbole avertit l'utilisateur que des instructions importantes relatives à l'utilisation et àl'entretien se trouvent dans le manuel accompagnant l'appareil.

PRECAUTION:

Cette marque indique le fusible à action in stantansée. Pour la protection continue contre le risque d'incendie, ne remplacer que par le fusible type F901 (3A, 125V).

3A 125V

PRECAUTIONS IN PART REPLACEMENT

When servicing the unit with power on, be careful to the section marked white all over.
This is the primary power circuit which is live.
When checking the soldering side in the tape travel mode, make sure first that the tape has been loaded and then turn over the PWB with due care to the primary power circuit.
Make readjustment, if needed after replacement of part, with the mechanism and its PWB in position in the main frame.

(1) Start and end sensors: Q701 and Q702

Insert the sensor's projection deep into the upper hole of the holder. Referring to the PWB, fix the sensors tight enough.

(2) Photocoupler: IC901

Refer to the symbol on the PWB and the anode marking of the part.

(3) Cam switches A and B: D708 and D709.

Adjust the notch of the part to the white marker of the symbol on the PWB. Do not allow any looseness.

(4) Take-up and supply sensors: D707 and D706.

Be careful not to confuse the setting direction of the parts in reference to the symbols on the PWB. Do not allow any looseness.

1. GENERAL INFORMATION

1-1 FEATURES

- **High speed FF/REW (*400)**
- **EZ Set Up**
- **S-VHS Quasi Playback**
- **Double Azimuth 4-Head**
- **19μm Clear Picture System (in EP Mode)**
- **HQ System for Better Resolusion and color Reproduction**
- **3-Language OSD with Menu Screen Guidance**
- **181-ch PLL Quartz Synthesized Random Access Tuner with Automatic Channel Setting**
- **Quick Start with Full Loading Mechanism**
- **1-Year, 8-Event Programmable Timer**
- **Simple Recording Timer**
- **SHARP Super Picture**
- **20 seconds Timer Backup**
- **Field-Still/Variable Slow/Frame Advance**
- **Real-Time Counter**
- **Automatic Daylight Saving-Time (D.S.T.)Adjustment**
- **Blue Screen Noise Elimination**
- **Automatic Tracking Control System**
- **Digital Program Search System (DPSS)**
- **CM Skip Search**
- **Instant Replay**
- **Auto Zero Back**
- **Recorded Section Auto Repeat**
- **Full Automatic Playback**
- **Tamper Proof**
- **Up to 8 Hours of Recording/Playback (T-160)**
- **Automatic Head Cleaning System**
- **Built-in Front AV Jacks**
- **Built-in MTS (Multi-channel TV Sound) Detector (Hi-Fi Models)**
- **Built-in Shuttle Control System (Except VC-A598U/H995U)**
- **VCR Plus+ Programming System (Except VC-H996U/H998U)**
- **VCR Plus+, C^3 Programming System (VC-H996U/H998U)**
- **Universal Remote Control: with Light-up Button (VC-H997U/H9977U), with Remote Pager Function (VC-H998U)**
- **Cable Box Channel Control Function/Digital Satellite Receiver Control Function (VC-H996U/H998U)**

1-2 SPECIFICATIONS

1) Recording system

Format:	VHS NTSC Standard
Luminance signal:	FM recording
Chroma signal:	Low frequency converted direct recording
Color system:	NTSC
Number of video head:	4
Tape speed:	(SP) 33.35 mm/sec (LP) 16.67 mm/sec (EP) 11.12 mm/sec

2) Video signal

Input level:	0.5 ~ 2.0 Vp-p, 75 ohm unbalanced
Output level:	1.0 Vp-p, 75 ohm unbalanced
Horizontal resolusion:	220 lines (SP mode)
Signal to noise ratio:	45dB (SP mode)

3) Audio signal

Input level:	– 8 dBs (309mVrms, 47k ohm)
Output level:	– 8 dBs (309mVrms, 1k ohm)
Frequency response:	80Hz ~ 10kHz (SP mode linear)
Signal to noise ratio:	43dB (SP mode linear)
Hi-Fi dynamic range:	90dB
HI-Fi Frequency response:	20Hz ~ 20kHz
Hi-Fi Wow and flutter:	0.005% max. with T-120 tape

4) Receiving channel

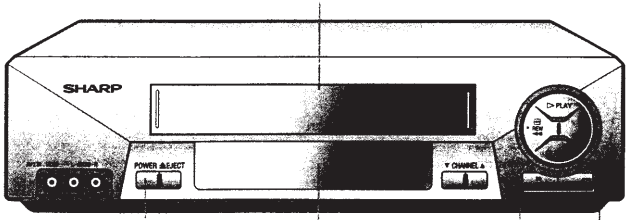
VHF:	Channels 2 ~ 13
UHF:	Channels 14 ~ 69
CATV:	Channels A-8, A-5 ~ W + 84
Antenna Input Impedance:	75 ohm

5) Misc.

Fast forward /Rewind time:	Approximate 54 second with T-120 cassette
Power source:	120 V AC, 60 Hz
Power consumption:	20 W
Allowable ambient temperature:	with T-120 tape 5°C to 40°C (41°F to 104°F)
Operating humidity:	below 80% RH
Dimensions:	360 (W), 92 (H), 256 (D) mm(14-3/16, 3-5/8, 10-5/64 inch)(VC-A598U/H995U) 360 (W), 92 (H), 256 (D) mm(14-3/16, 3-5/8, 10-5/64 inch) (Except VC-A598U/H995U)
Weight:	2.8 kg (6.17 lbs)
Accessories included:	75 ohm coaxial cable, Operation manual, Registration card Infrared remote control, Dry Battery (2 pcs.)
Note:	Specifications may be changed for improvement without notice.

Major Components of Your VCR

[Front]


Cassette compartment (see **Playback/Recording**)
SHARP
(VC-H995U)
POWER button
(When pressed to turn on the VCR, some indicators on the Multi-Function display light up, and the Multi-Function display brightens. When the power is turned off, the Multi-Function display dims.)
Basic function controls (see **Playback/Recording**)

NOTE
- The design may be slightly different depending on the model.

Multi-Function Display (explained throughout the operation instructions)

When the power is on, each time **DISPLAY** is pressed, the Multi-Function display changes as follows:

❶ Channel setting → ❷ Tape counter → ❸ Clock

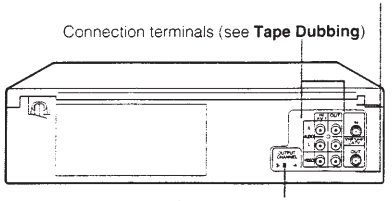
NOTE
- Tape counter is displayed during playback, fast forward or rewind operation.
- When the power is turned off, the clock is displayed and the Multi-Function display becomes darker.

Display	Symbol	Function Status	Display	Symbol	Function Status
STOP	—	Stop	FF	—	Fast forward
PLAY	▶	Play	REW	—	Rewind
PLAY	▶	Video Search, Slow, Still, Frame Advance	PAUSE	REC	Rec Pause
REC	REC	Record	—	📼	Cassette-in
—	🔑	Tamper Proof Active	—	VCR	Unit in VCR mode

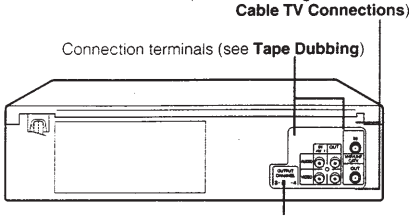
NOTE
- The display will return to the original mode (counter or clock display) 3 seconds after the VCR enters the operation mode.

[Rear]

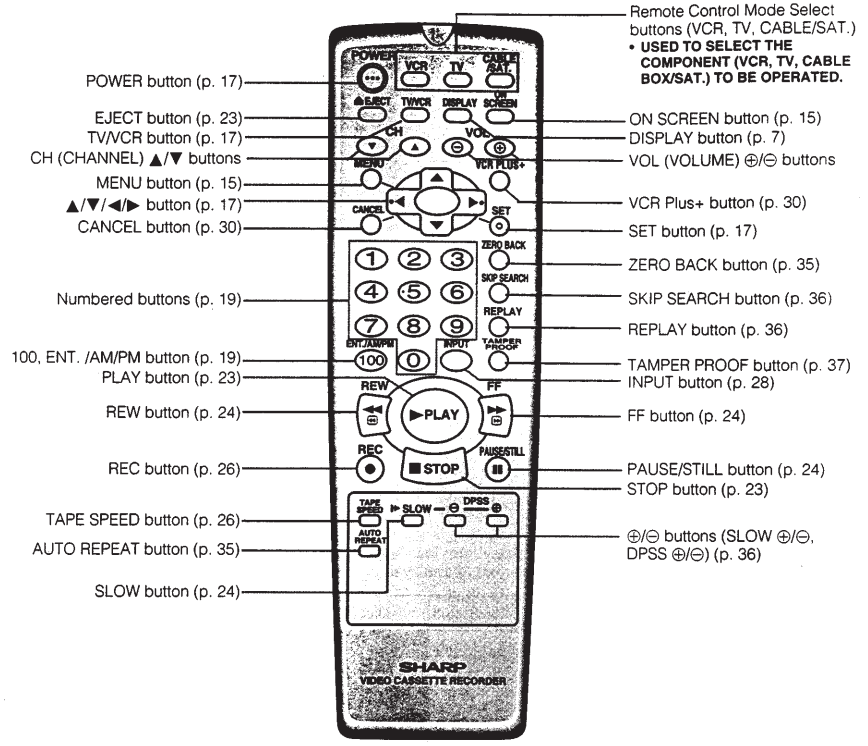
(VC-H995U)


Connection terminals (see **Connecting the VCR** and **Cable TV Connections**)
Connection terminals (see **Tape Dubbing**)
3 ↔ 4 OUTPUT CHANNEL selector
(see **Setting the 3 ↔ 4 Output Channel Selector**)

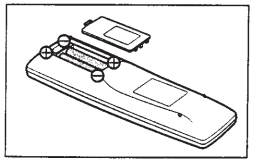
(VC-A598U)


Connection terminals (see **Connecting the VCR** and **Cable TV Connections**)
Connection terminals (see **Tape Dubbing**)
3 ↔ 4 OUTPUT CHANNEL selector
(see **Setting the 3 ↔ 4 Output Channel Selector**)

Remote Control


Remote Control Mode Select buttons (VCR, TV, CABLE/SAT.)
• **USED TO SELECT THE COMPONENT (VCR, TV, CABLE BOX/SAT.) TO BE OPERATED.**
POWER button (p. 17)
EJECT button (p. 23)
TV/VCR button (p. 17)
CH (CHANNEL) ▲/▼ buttons
MENU button (p. 15)
▲/▼/◀/▶ button (p. 17)
CANCEL button (p. 30)
Numbered buttons (p. 19)
100, ENT. /AM/PM button (p. 19)
PLAY button (p. 23)
REW button (p. 24)
REC button (p. 26)
TAPE SPEED button (p. 26)
AUTO REPEAT button (p. 35)
SLOW button (p. 24)
ON SCREEN button (p. 15)
DISPLAY button (p. 7)
VOL (VOLUME) ⊕/⊖ buttons
VCR Plus+ button (p. 30)
SET button (p. 17)
ZERO BACK button (p. 35)
SKIP SEARCH button (p. 36)
REPLAY button (p. 36)
TAMPER PROOF button (p. 37)
INPUT button (p. 28)
FF button (p. 24)
PAUSE/STILL button (p. 24)
STOP button (p. 23)
⊕/⊖ buttons (SLOW ⊕/⊖, DPSS ⊕/⊖) (p. 36)
SHARP
VIDEO CASSETTE RECORDER

Inserting the Batteries



Make sure that the batteries have been properly installed first. Fit two batteries type "AA". If the remote control stops working, fit new batteries.

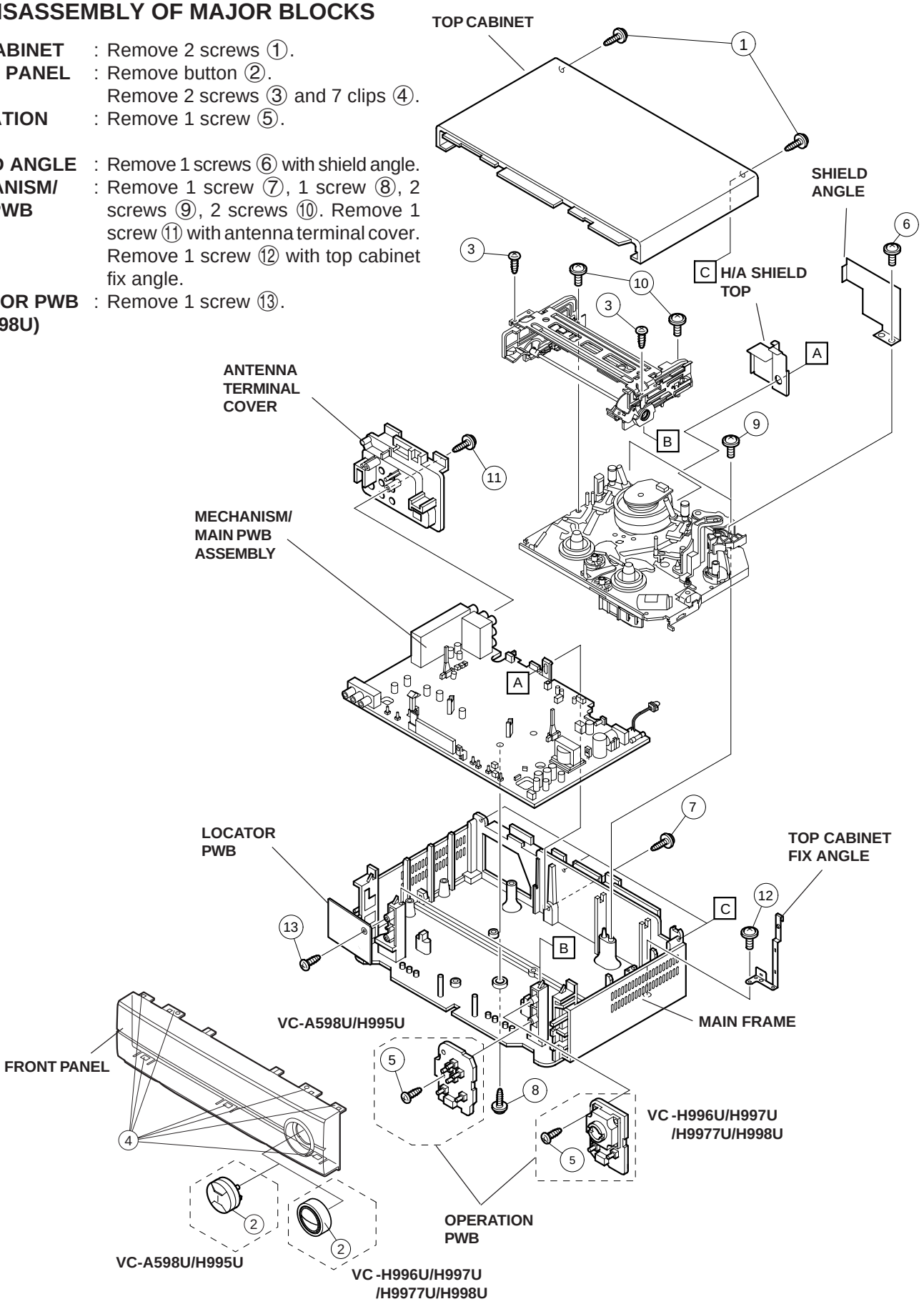
Ensure the batteries are fitted correctly, matching the polarities (⊕/⊖) indicated in the remote control.

NOTE
- **After changing the batteries in the remote control, the code settings for the TV, cable box and Digital Satellite Receiver must be re-entered.**
- Do not subject the remote control to shock, water or excessive humidity.
- The remote control may not function if the VCR sensor is in direct sunlight or any other strong light.
- Incorrect use of batteries may cause them to leak or burst. Read the battery warnings and use the batteries properly.
- Do not mix old and new batteries, or mix brands in use.
- Remove the batteries if the remote control will not be operated for an extended period of time.
- If the remote control does not function properly when new batteries are installed, remove the batteries and keep pressing any button for 10 seconds before re-installing them.

2. DISASSEMBLY AND REASSEMBLY

2-1 DISASSEMBLY OF MAJOR BLOCKS

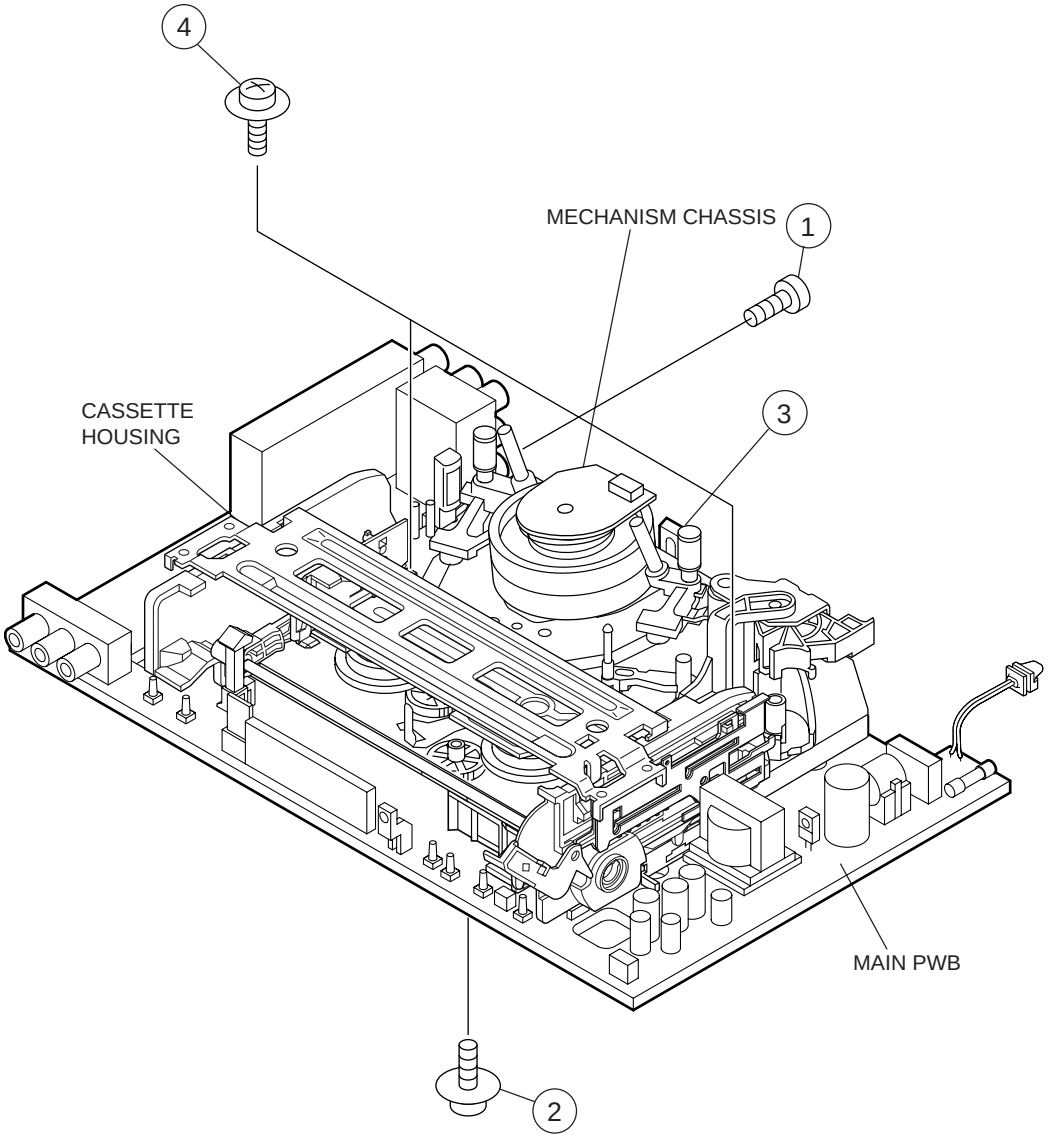
TOP CABINET : Remove 2 screws ①.
FRONT PANEL : Remove button ②.
Remove 2 screws ③ and 7 clips ④.
OPERATION PWB : Remove 1 screw ⑤.
SHIELD ANGLE : Remove 1 screws ⑥ with shield angle.
MECHANISM/ MAIN PWB : Remove 1 screw ⑦, 1 screw ⑧, 2 screws ⑨, 2 screws ⑩. Remove 1 screw ⑪ with antenna terminal cover. Remove 1 screw ⑫ with top cabinet fix angle.
LOCATOR PWB (VC-H998U) : Remove 1 screw ⑬.



2-2 DISASSEMBLING THE MECHANISM/MAIN PWB ASSEMBLY

1. When removing the mechanism from the main PWB, remove the antenna cover 1 screw ①, and remove the antenna cover.
   Remove the PWB bottom plate 1 screw ②.
   Remove the FFC cable (AA, AD, AH) ③ which connecting the PWB and the mechanism.
   Take out vertically the mechanism so that it does not damage the adjacent parts.

2. Removing the mechanism and cassette housing.
   Remove 2 screws ④ fixing the cassette housing to the mechanism, and remove the cassette housing.



2-3 CARES WHEN REASSEMBLING

INSTALLING THE CASSETTE HOUSING

When the cassette housing is installed on the mechanism, the initial setting is essential condition.

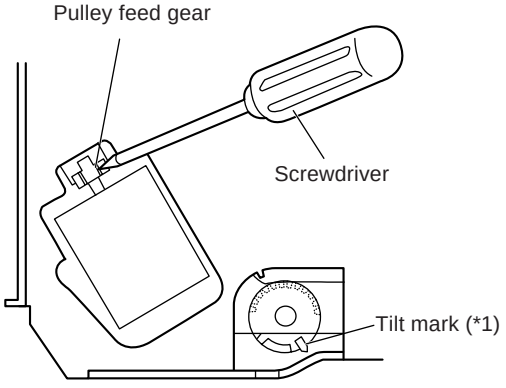
There are two initial setting methods, namely electrical and mechanical.

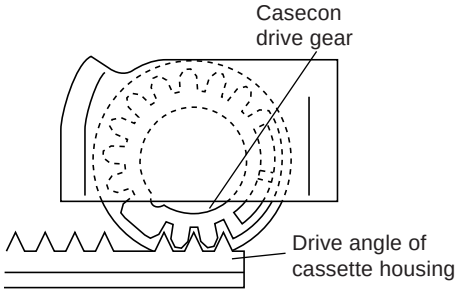
1. Electrical initial setting

So as to perform initial setting of mechanism execute the Step 1 of Installation of cassette housing. After ascertaining the return to the initial setting position (*1) install the cassette housing. (Conditions: When mechanism and PWB have been installed)

2. Mechanical initial setting

Feed the pulley feed gear of loading motor with screw driver. After ascertaining the return to the initial set position (*1) install the cassette housing in the specified position. (This method is applied only for the mechanism.)



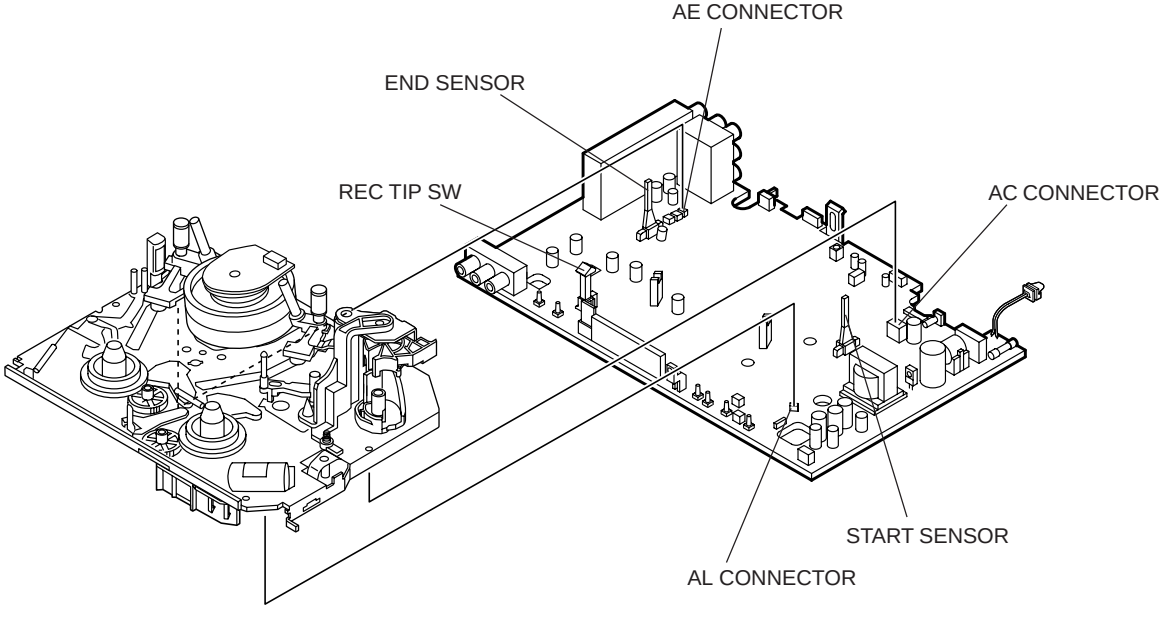


INSTALLING THE MECHANISM ON PWB

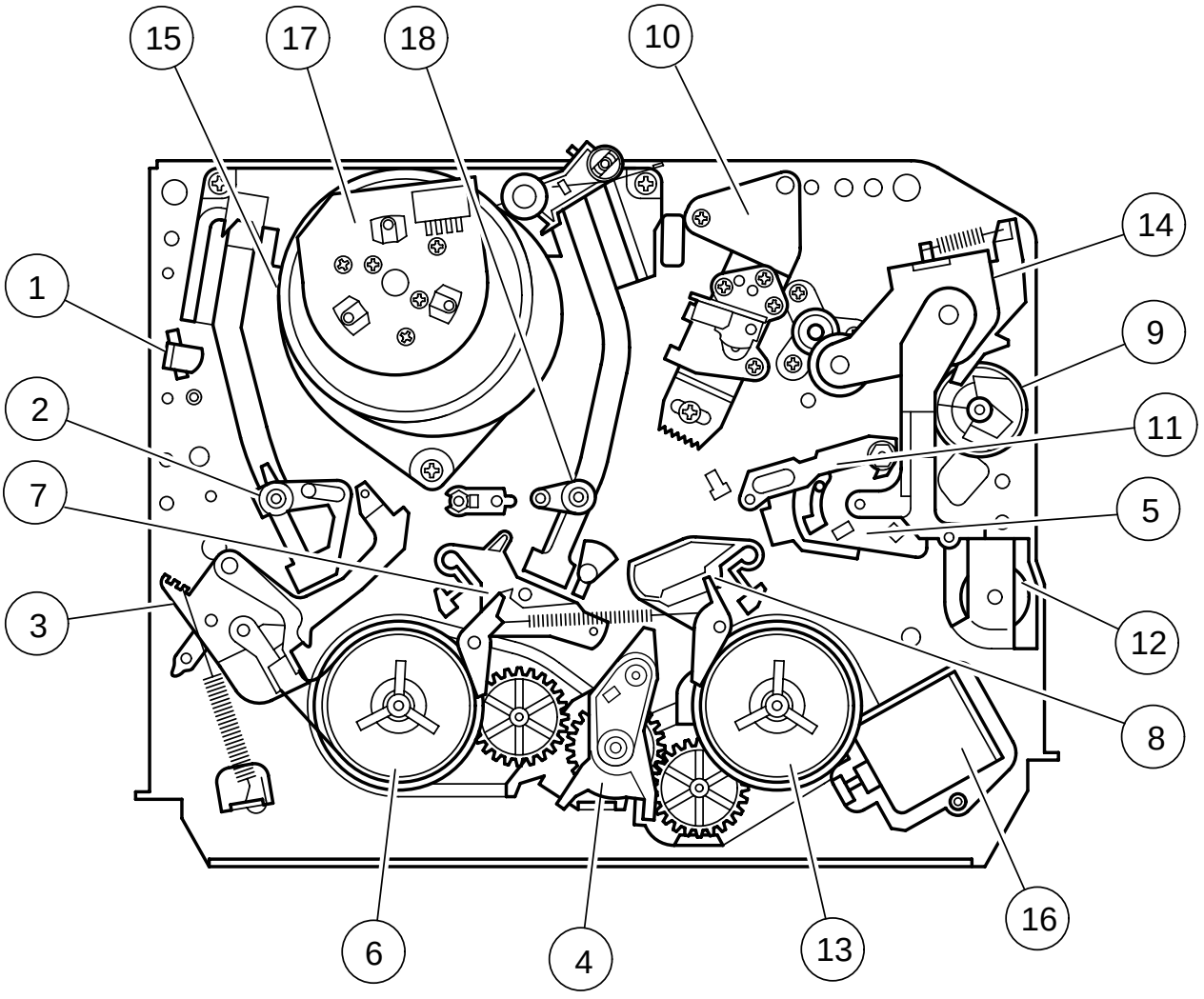
Lower vertically the mechanism, paying attention to the mechanism edge, and install the mechanism with due care so that the parts are not damaged. So as to fix the mechanism to the main PWB install two housings. (Fit the antenna cover to one of them. For other, fix the vicinity of loading motor and solder joint side of main PWB.) Connect again the FFC cable (AA-MH, AD-ME, AH-MH) between the mechanism and the main PWB.

PARTS WHICH NEED PARTICULAR CARE

When installing the mechanism chassis on the PWB unit, take care so as to prevent deformation due to contact of mechanism chassis with REC TIP SW.

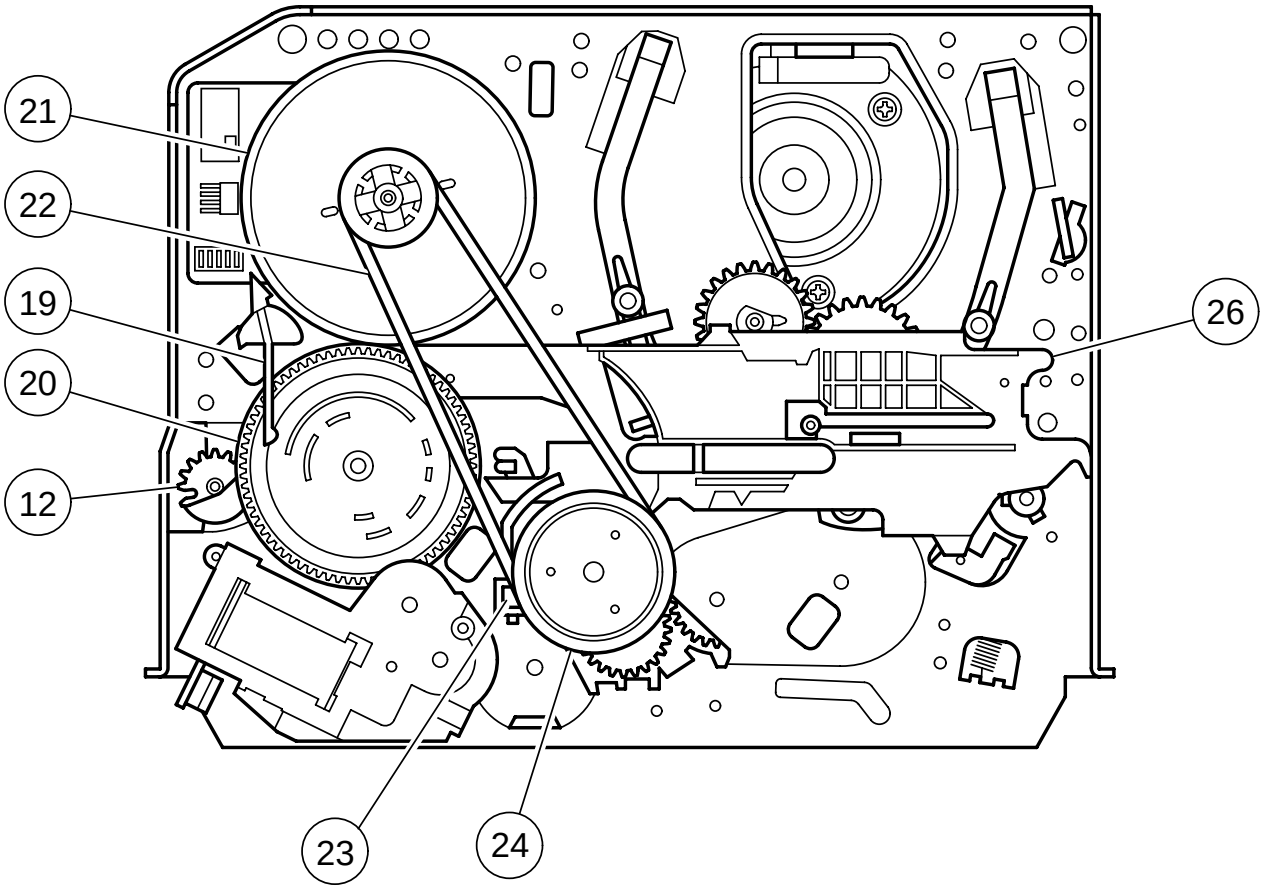


3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1	Full erase head	8	Tu main brake
2	Sup pole base ass'y	9	Pinch drive cam
3	Tension arm	10	A/C head ass'y
4	Idler ass'y	11	Reverse guide
5	Pinch drive lever ass'y	12	Casecon drive gear
6	Supply reel disk	13	Take-up reel disk
7	Sup main brake	14	Pinch roller lever ass'y

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)



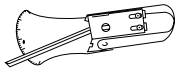
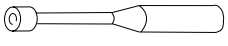
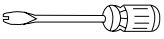
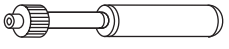
No.	Function	No.	Function
15	Drum ass'y	22	Reel belt
16	Loading motor	23	Clutch lever
17	Drum drive motor	24	Limiter pulley ass'y
18	Tu pole base ass'y	26	Shifter
19	Slow brake		
20	Master cam		
21	Capstan D.D. motor		

4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

The explanation given below relates to the on-site general service (field service) but it does not relates to the adjustment and replacement which need high-grade equipment, jigs and skill. For example, the drum assembling, replacement and adjustment service must be performed by the person who have finished the technical courses.

4-1 MECHANISM CONFIRMATION ADJUSTMENT JIG

So as to perform completely the mechanism adjustment prepare the following special jigs. So as to maintain the initial performance of the machine the maintenance and check are necessary. Utmost care must be taken so that the tape is not damaged. If adjustment needs any jig, be sure to use the required jig.

No.	Jig Item	Part No.	Code	Configuration	Remarks
1.	Torque Cassette Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.
2.	Torque Gauge	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.
		JiGTG1200	CN		
3.	Torque Gauge Head	JiGTH0006	AW		
4.	Torque Driver	JiGTD1200	CB		When fixing any part to the threaded hole using resin with screw, use the jig. (Specified torque 5 kg)
5.	Master Plane Jig and Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.
		JiGMP0001	BY		
6.	Tension Gauge	JiGSG2000	BS		There are two gauges used for the tension measurements, 300 g and 2.0kg.
		JiGSG0300	BF		
7.	Pinch pressing force measuring jig	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.
8.	Reverse guide height adjusting box driver	JiGDRiVER11055	AR		This Jig is used for height adjustment of the reverse guide (for reverse guide height adjustment).
9.	Alignment Tape				These tapes are especially used for electrical fine adjustment.
		VROATSV	CD		525 Monoscope: Audio 7k, HiFi Audio —, Track 58µm NTSC Color Bar: Audio 1k, HiFi Audio —, Track 58µm
		VROEFZCS OR VROEFZHS	BG		Black Level (only SYNC) signal: Audio 1k, HiFi Audio —, Track 19µm
			BH		Audio 2.3k
10.	Guide roller height adjustment drive	JiGDRiVERH-4	AP		This screwdriver is used for adjusting the guide roller height.
11.	X value adjustment gear type screw driver	JiGDRiVER-6	BM		For X value adjustment
12.	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.

MAINTENANCE CHECK ITEMS AND EXECUTION TIME

Perform the maintenance with the regular intervals as follows so as to maintain the quality of machine.

Parts \ Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y	□	□	□	□	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Sup guide shaft	□	□	□	□		Clean tape contact part with the specified cleaning liquid.
Reverse guide	□	□	□	□		
Slant pole or pole base	□	□	□	□		
Full erase head	□	□	□	○	Colour and beating	Clean tape contact area with the specified cleaning liquid.
A/C head	□	□	□	○	Small sound or sound distortion	
Upper and lower drum ass'y	□	○□	○□	○□	Poor S/N ratio, no colour Poor flatness of the envelope with alignment tape	
Capstan D.D. motor	□	□	□	□	No tape running, uneven colour	
Pinch roller	□	□	□	□	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt		□		○	No tape running, tape slack, no fast forward/rewind motion	
Tension band ass'y				○	Screen swaying	
Loading motor				○	Cassette not loaded or unloaded	
Idler ass'y				○	No tape running, tape slack	
Limiter pulley		□△		□○		
Supply/take-up main brake levers				○	Tape slack	
AHC(Automatic head cleaner)		○		○		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE: ○: Part replacement. □: Cleaning △: Apply grease
<Specified> Cleaning liquid Industrial ethyl alcohol

* This mechanism does not need electric adjustment with variable resistor. Check parts. If any deviation is found, clean or replace parts.

REMOVING AND INSTALLING THE CASSETTE HOUSING

• Removal

1. In the cassette removing mode, remove the cassette.
2. Unplug the power cord.
3. Remove in the following numerical order.
   a) Remove two screws ①.
   b) Slide and pull up the cassette housing control.

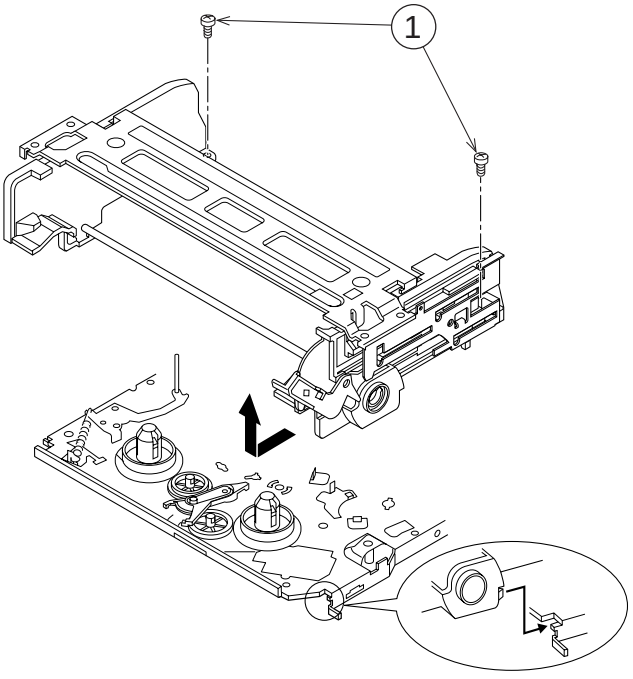


Figure 4-1.

• Reassembly

1. Before installing the cassette housing control, short-circuit TP801 provided at the center (when facing to the main PWB), press the eject button. The casecon drive gear turns and stops when the positioning mark appears. Engage two teeth of casecon drive gear with the three teeth of casecon drive angle gear, and set on the mechanism chassis as shown below.

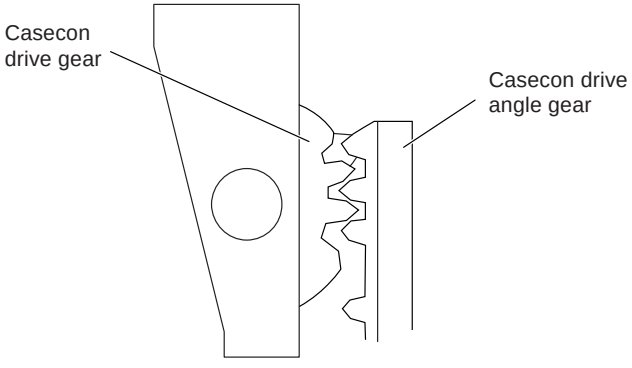


Figure 4-2.

2. Install in the reverse order of removal.

Notes:

1. When fitting the S/E sensor holder to the cassette controller frame L/R, take care.
2. Misengagement of teeth of casecon drive gear and drive angle gear causes malfunction. (The cassette cannot be set, load and ejection are repeated).
3. In the case when you use the magnet screw driver, never approach the magnet driver to the A/C head, FE head, and drum.
4. When installing or removing, take care so that the cassette housing control and tool do not contact the guide pin or drum.
5. After installing the cassette housing control once perform cassette loading operation.

TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Remove the full-surface panel.
2. Short-circuit TP801.
3. Plug in the power cord.
4. Turn off the power switch.
   (The pole bases move into U.L.position.)
5. Open the lid of a cassette tape by hand.
6. Hold the lid with two pieces of vinyl tape.
7. Set the cassette tape in the mechanism chassis.
8. Stabilize the cassette tape with a weight (500g) to prevent floating.
9. Turn on the power switch.
10. Perform running test.

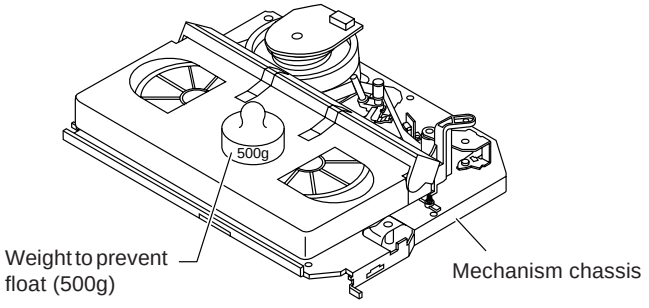


Figure 4-3.

Note:
The weight should not be more than 500g.

To take out the cassette tape.

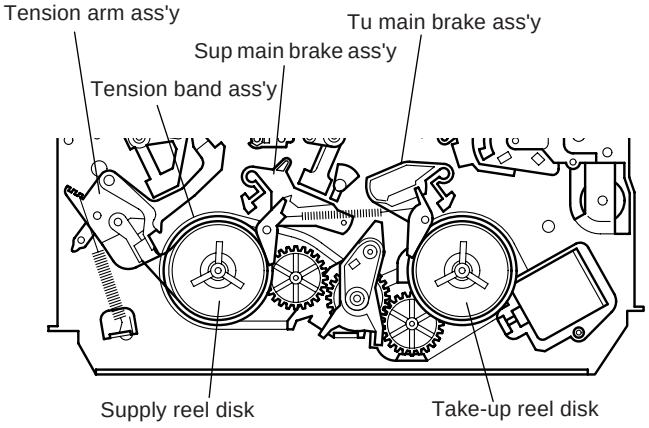
1. Turn off the power switch.
2. Take out the cassette tape.

REEL DISK REPLACEMENT AND HEIGHT CHECK

- **Removal**

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm ass'y.
3. Remove the Sup/Tu main brake ass'y.
4. Open the hook at the top of the reel disk, and remove the reel disk.

Note:
Take care so that the tension band ass'y and main brake ass'y (especially soft brake) are not deformed.



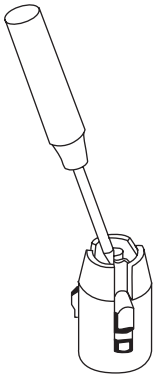


Figure 4-4.

Note:
When the tension band ass'y is pressed in the direction of the arrow for removal, the catch is hard to be deformed.

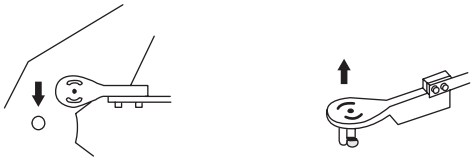


Figure 4-5.

- **Reassembly (Supply reel disk)**

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Match the phases of reel disk and reel relay gear, and set the new reel disk.
3. After checking the reel disk height, wind the tension band ass'y around the reel disk, and insert into the hole of tension arm ass'y.
4. Assemble the Sup main brake ass'y.

Notes:

1. When installing the reel disk, take due care so that the tension band ass'y is not deformed and grease does no adhere.
2. Do not damage the Sup main brake ass'y. Be careful so that grease does not adhere to the brake surface.

- **Reassembly (Take-up reel disk)**

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Align the phase of the reel disk to that of the reel relay gear and to install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake ass'y.

Note:

1. Take care so that the Tu main brake ass'y is not damaged. Take care so that grease does not adhere the brake surface.
2. After reassembly, check the video search rewind back tension (see page 18), and check the brake torque (see page 20).

- **Height checking and adjustment**

Note:

1. Set the master plane with due care so that it does not contact the drum.
2. When putting the master plane, shift the reverse guide a little in the loading direction. Care must be taken since excessive shift results in damage.

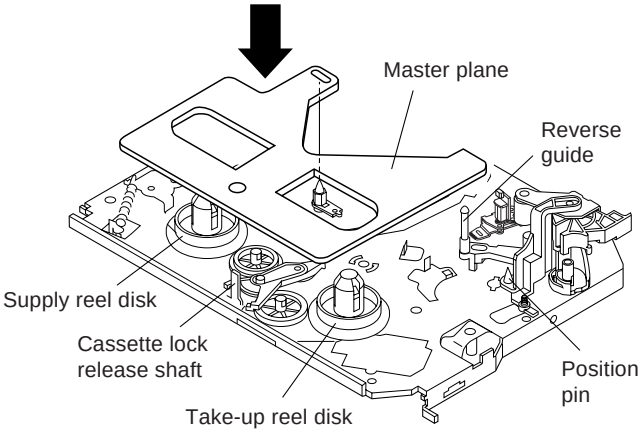


Figure 4-6.

Note:

- Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.

Note:
Whenever replacing the reel disk, perform the height checking and adjustment.

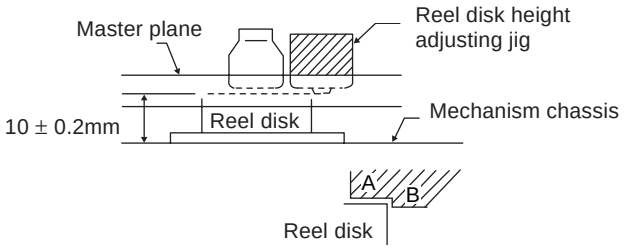


Figure 4-7.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
2. Press the FF button.
3. To calculate the remaining capacity of the play back mode, slowly rotate the supply reel disk, and then shift it into the forward mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CW direction.
2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

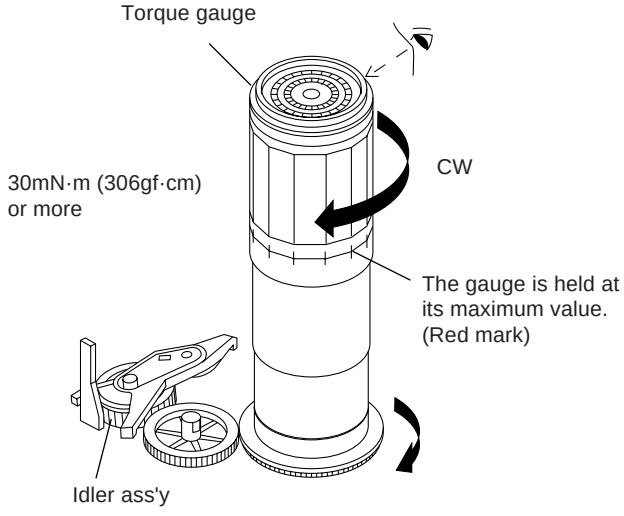


Figure 4-8.

- **Adjustment**

1. If the FF winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, and check again.
2. If the torque is less than the set value, replace the reel belt.

Notes:
1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Press the rewind button.
3. To calculate the remaining capacity, slowly rotate the take-up reel disk, and then shift it into the rewind mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CCW direction.
2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

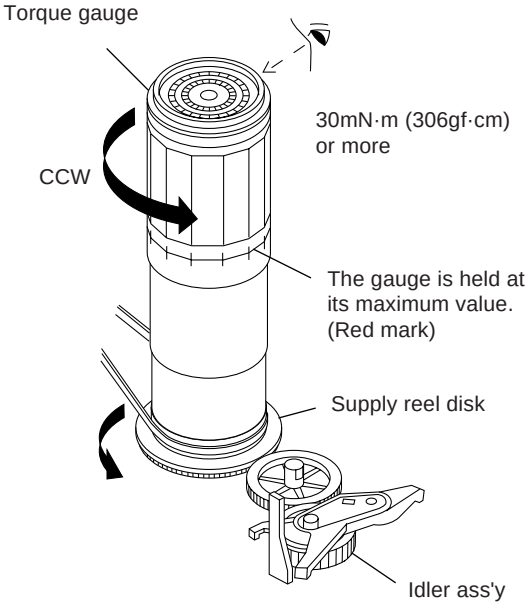


Figure 4-9.

- **Adjustment**

1. If the rewind winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, rewind again, and check the winding-up torque.
2. If the winding-up torque is still out of range, replace the drive belt.

Notes:
1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN RECORD/PLAYBACK MODE

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**
- **Turn off the power switch.**
- **Open the cassette torque meter lid, and fix it with tape.**
- **Load the cassette torque meter into the unit.**
- **Put the weight (500g) on the cassette torque meter.**
- **Turn on the power switch.**
- **Press the picture record button, and set EP picture record mode (x3).**

Set value EP6.9 ± 2.5mN·m (70 ± 25gf·cm)

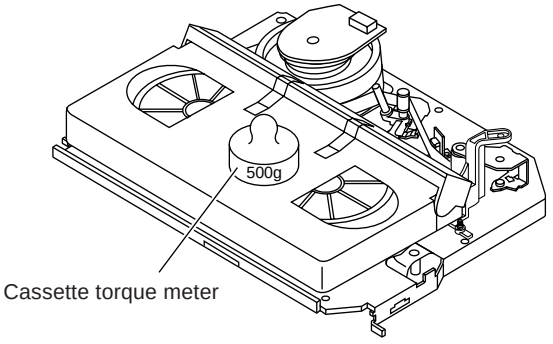


Figure 4-10.

- **Checking**

1. Make sure that value is within the setting 6.9±2.5mN·m (70±25gf·cm).
2. The winding-up torque fluctuates due to variation of rotation torque of limiter pulley ass'y. Read the center value of fluctuation as setting.
3. Set the EP record mode (x3) and make sure that the winding-up torque is within setting.

- **Adjustment**

If the playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:
When the torque cassette is set, put a weight (500g) to prevent rise.
When the cassette torque meter is taken out.
Turn off the power switch.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**
- **Setting**

Press the playback button and rewind button to set the video search rewinding mode.

- **Checking**

Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value 14.0 ± 3.9mN·m. (144 ± 40gf·cm)

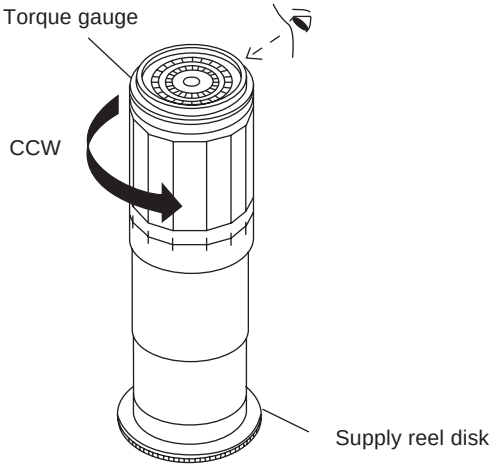


Figure 4-11.

Note:
Surely put the torque gauge on the reel disk to measure. If the torque gauge is raised, accurate measurement is impossible.

- **Adjustment**

If the rewinding playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:
The winding-up torque fluctuates due to variation of rotation torque of supply reel disk. Read the center value of fluctuation as setting.

CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Checking**

1. After pressing the play button, press the rewind button, and set the video search rewind mode.
2. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value 3.4±1.5mN·m (35±15gf·cm).

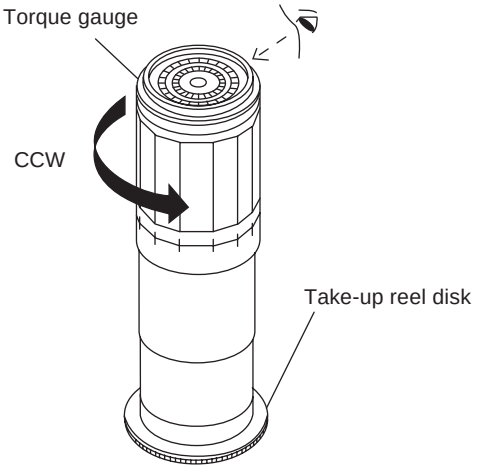


Figure 4-12.

Notes:

Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.

CHECKING THE PINCH ROLLER PRESSURE

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Checking**

Press the play button to set the playback mode.

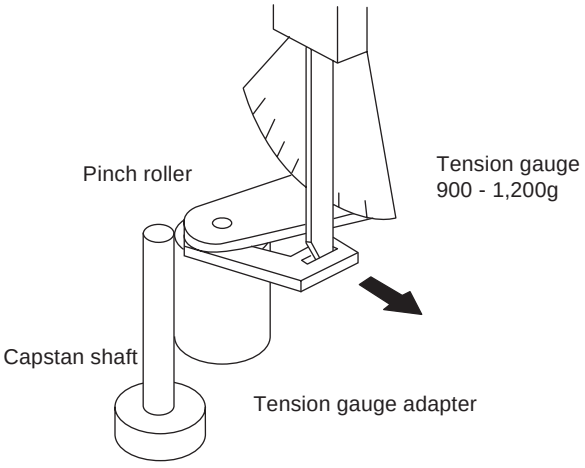


Figure 4-13.

1. Detach the pinch roller from the capstan shaft. Do not separate excessively. Or the pinch lever and pinch double action lever may disengage.
2. Engage the tension gauge adapter with the pinch roller shaft, and pull in the arrow direction.
3. Gradually return the pinch roller, and measure the pulling force when the pinch roller contacts the capstan shaft.
4. Make sure that the measured value is within setting 9.0 to 11.8 N (900 to 1,200gf).

CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Turn off the power switch.
2. Open the cassette tape (T-120), and fix with tape.
3. Set the cassette tape in loading state.
4. Put the weight (500g) on the cassette tape.
5. Turn on the power switch.
6. Make the adjustment with the beginning of a T-120 tape.

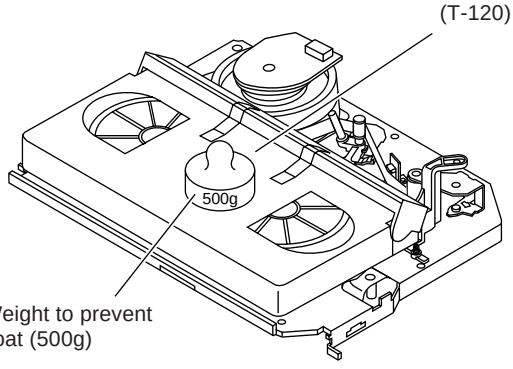
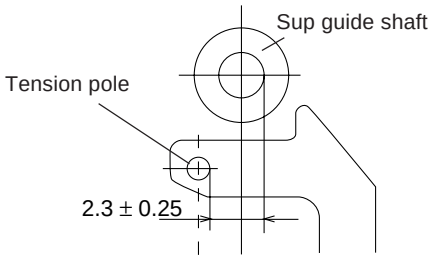


Figure 4-14.

- **Checking**

1. Set a cassette tape, push the REC button to place the unit in the SP record mode. Now check the tension pole position.

2. Visually check to see if the right edge of the tension pole is within the 2.3 ± 0.25 from the right edge of the Sup guide shaft.



Make the adjustment with the beginning of a T-120 tape.

Figure 4-15.

At left side from the center line

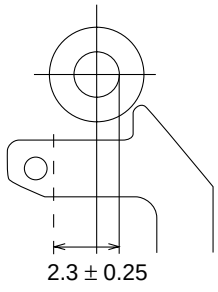


Figure 4-16.

Insert the slotted screwdriver in the tension pole adjuster, and rotate counterclockwise.

At right side from the center line

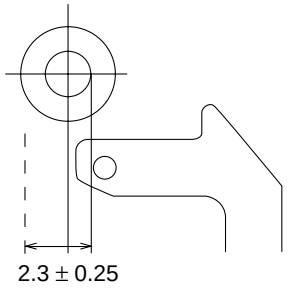


Figure 4-17.

Insert the slotted screwdriver in the tension pole adjuster, and rotate clockwise.

Tension pole adjuster adjusting range

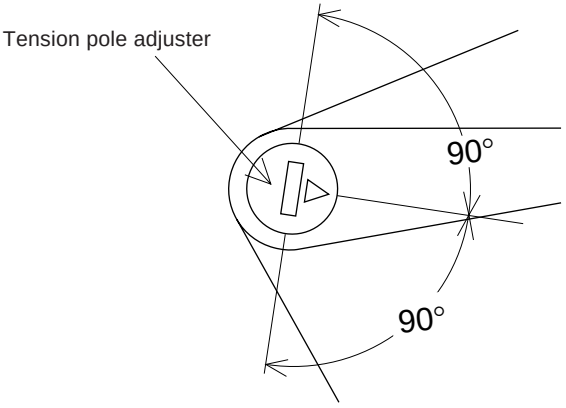


Figure 4-18.

Adjust so that the delta mark of tension pole adjuster is within 90° range (left, right).

CHECKING AND ADJUSTMENT OF RECORD/ PLAYBACK BACK TENSION

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**
- **Setting**

1. Turn off the power switch.
2. Open the torque cassette meter and fix with tape.
3. Set the cassette tape in loading state.
4. Put the weight (500g) on the cassette torque meter.
5. Turn on the power switch.

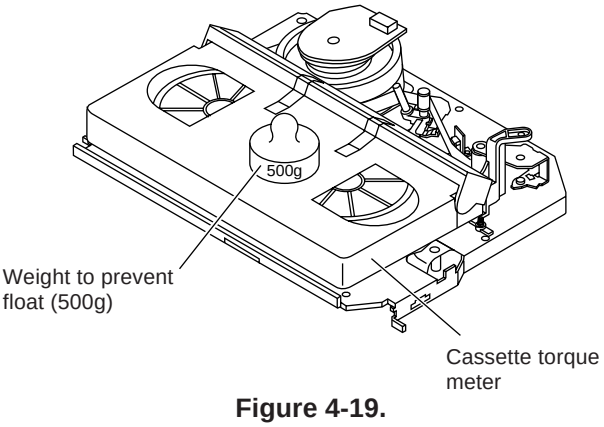


Figure 4-19.

- **Checking**

1. Push the REC button to place the unit in the SP record mode.
2. At this time ascertain that the back tension is within the setting (36.5 to 52g·cm) by seeing the indication of torque cassette meter.

- **Adjustment**

1. If the indication of torque cassette meter is lower than the setting, shift the tension spring engagement to the part A.
2. If the indication of torque cassette meter is higher than the setting, shift the tension spring engagement to the part B.

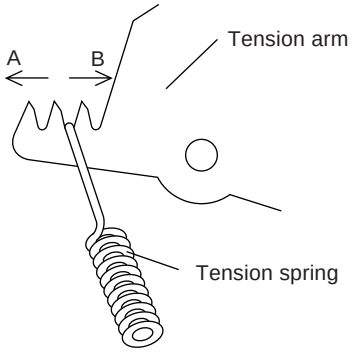
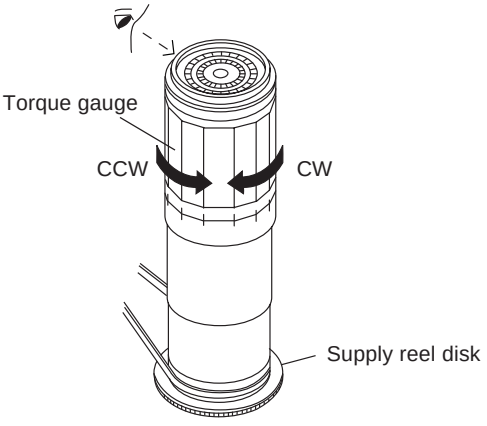


Figure 4-20.

CHECKING THE BRAKE TORQUE

- **Checking the brake torque at the supply side**



CCW:	2.9~9.8mN·m (30~100gf·cm)
CW:	4.9~13.7mN·m (50~140gf·cm)

Figure 4-21.

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

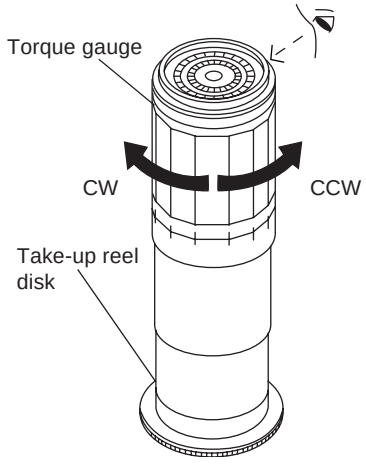
- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the power cord.

- **Checking**

Turn the torque gauge at a rate of about one turn/2 sec in the CW direction/CCW direction with respect to the supply reel disk so that the reel disk and torque gauge pointer rotate at equal speed, and make sure that the value is within the setting (CW direction: 4.9 to 13.7mN·m (50 to 140gf·cm); CCW direction: 2.9 to 9.8mN·m (30 to 100gf·cm).

- **Checking the brake torque at the take-up side**



CCW:	4.9~13.7mN·m (50~140gf·cm)
CW:	3.9~10.8mN·m (40~110gf·cm)

Figure 4-22.

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Switch from the FF mode to the STOP mode.
2. Disconnect the power cord.
3. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.

- **Checking**

1. Turn the torque gauge at a rate of about one turn/2 sec in the CCW direction/CW direction so that the reel disk and torque gauge pointer rotates at equal speed and make sure that the value is within the setting (CCW direction: 4.9 to 13.7mN·m (50 to 140gf·cm), CW direction: 3.9 to 10.8 mN·m (40 to 110gf·cm).

2. Adjustment of the brake torque at the supply side and the take-up side

- Unless the supply side brake torque or take-up side brake torque is within the setting, clean the felt surface of reel disk (supply, take-up) brake lever, check again the brake torque.
- If value cannot be set within the setting yet, replace the main brake ass'y or main brake spring.

REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. In unloading state unplug the power cord.

- **Removal**

1. Remove the screws ①②③, Azimuth screw, Tilt screw.
2. Unsolder the PWB fitted to the A/C head.

Notes:

1. When replacing, never touch the head. If you touched, clean with the cleaning liquid.
2. When removing the screw ③, take care so that the spring may out.

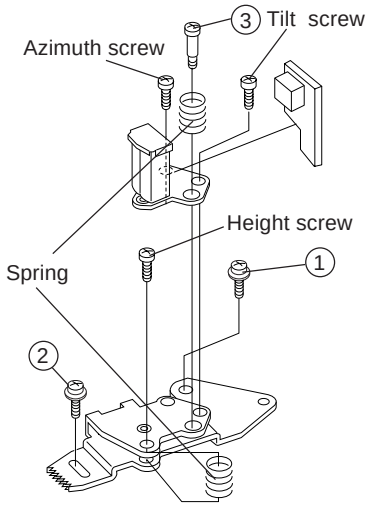
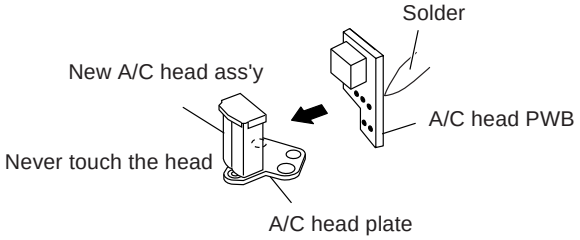


Figure 4-23.

- **Replacement**

1. Solder the removed PWB to the new head assembly.
2. Adjust the height from the A/C head arm (lower surface) to the A/C head plate to 10.8mm with slide calipers. (3 places of azimuth screw section, tilt screw section and A/C head front section) (See the figure below.)



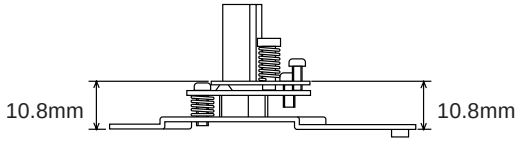


Figure 4-24.

3. Align the left end of gear of A/C head arm with the punched mark of chassis, tentatively tighten the screws ① and ② so as to ensure smooth motion of A/C head arm. Tentative tightening torque must be 0.15 to 0.20 N·m (1.5 to 2.0kgf·cm).

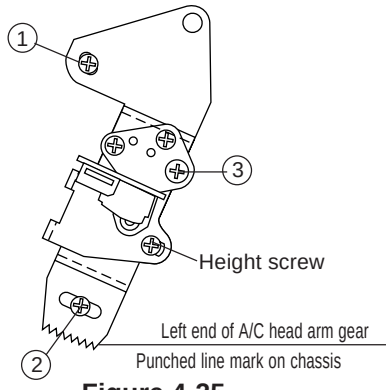


Figure 4-25.

Note:

1. If the screws ① and ② are tighten tentatively too loose, the azimuth and height of A/C head may change when they are finally tightened. Therefore care must be taken.
2. After completion of A/C head be sure to adjust tape running. (Execute the running adjustment by the method described in Page 23, 24.)

A/C HEAD HEIGHT ROUGH ADJUSTMENT

- **Setting**

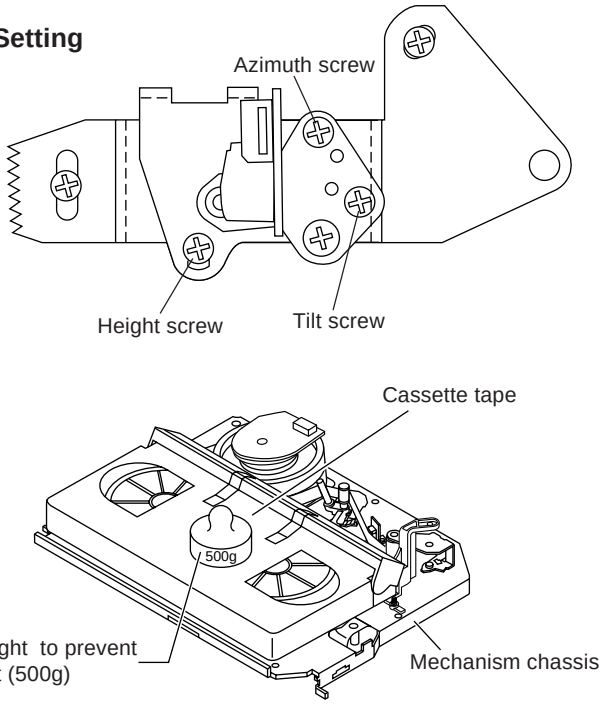


Figure 4-26.

1. Set the cassette tape in the unit.
2. Press the PLAY button to put the unit in the playback mode.
3. Roughly adjust the height of the A/C head by turning the height screw until the tape is in the position shown below.

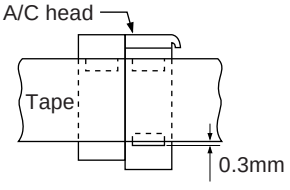


Figure 4-27.

- **Adjustment**

Adjust the height screw visually so that the control head is visible 0.3mm below the bottom of the tape.

HEIGHT ADJUSTMENT OF REVERSE GUIDE

1. Adjust the height from the mechanism chassis to the reverse guide lower flange to 13.38 mm, using the reverse guide height adjustment jig, in tape loading state. (Refer to Figure 4-28 (a) (b).)

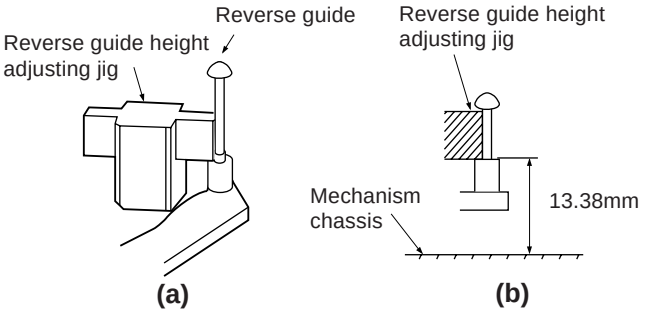


Figure 4-28.

2. Rotate counterclockwise the reverse guide height adjustment nut 1/10 turn. (For height adjustment use the reverse guide height adjustment box driver (JiGDRiVER 11055)).

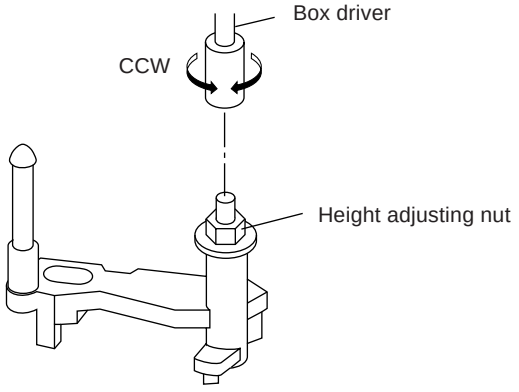
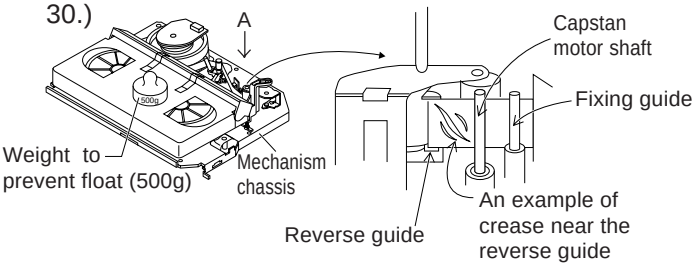


Figure 4-29.

3. Set the tape, and check for tape crease near the reverse guide in the playback mode.
   If crease is found, turn the reverse guide adjustment nut to remove crease. (As for crease check refer to Figure 4-30.)



* Check for crease from the A direction.

Figure 4-30.

ADJUSTMENT OF TAPE DRIVE TRAIN

1. Tape run rough adjustment
   ① Remove the cassette housing control assembly.
   ② After shortcircuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
   ③ Check and adjust the position of the tension pole. (See page 18.)
   ④ Check and adjust the video search rewind back tension. (See page 18.)
   ⑤ Connect the oscilloscope to the test point for PB CHROMA envelope output (TP201). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP202).
   ⑥ Set the alignment tape (VROATSV) to play. (Put a 500g weight on the cassette tape to prevent lift of cassette tape.)

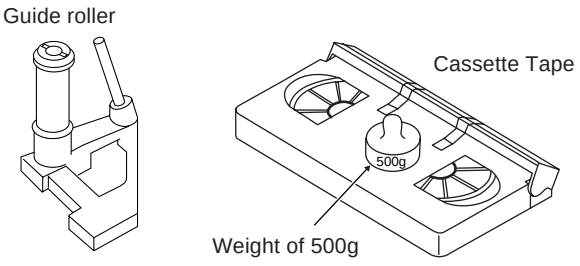


Figure 4-31.

   ⑦ Press the tracking button (+), (–) and change the envelope waveform from max to min and from min to max. At this time make sure that the envelope waveform changes nearly parallel.
   ⑧ Unless the envelope waveform changes nearly parallel, adjust the height of supply side and take-up side guide roller so that the envelope waveform changes nearly parallel. (For envelop adjustment procedure refer to Figure 4-35.)
   ⑨ Turn the tilt screw to remove the tape crease at the fixing guide flange.
   Playback the tape and check for tape crease at the fixing guide flange.
   (1) If there is no tape crease
   Turn the tilt screw clockwise so that tape crease appears once at the flange, and then return the tilt screw so that the crease disappears.
   (2) If there is tape crease
   Turn counterclockwise the tilt screw so that the tape crease disappears.
   (Reference) If the tilt screw is turned clockwise crease appears at the lower flange.

Notes:

1. Previously set the tracking control in the center position, and adjust the envelop waveform to maximum with X value adjustment nut. Thereby the tape run rough adjustment is facilitated.
2. Especially the outlet side envelope waveform must have higher flatness.

Figure 4-32.

2. Adjustment of A/C head height and azimuth
   ① Perform the initial setting of A/C head position by the method stated in "Page 21 Replacement 3".
   ② Connect the oscilloscope to the audio output terminal.
   ③ Using the alignment tape in which 1 kHz linear audio signal has been recorded, adjust the height screw so as to get max audio output.
   ④ Using the alignment tape in which 7 kHz linear audio signal has been recorded, adjust the azimuth screw so as to get max audio output.
   ⑤ The adjustment of ③ and ④ twice or three times repeat, and finally adjust ④.

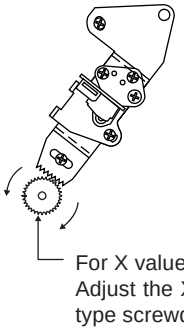


Figure 4-33.

3. Tape run adjustment
   ① Connect the oscilloscope to PB CHROMA envelope output test point, set oscilloscope sync to EXT, trigger-input the PB CHROMA signal (head switching pulse).
   ② Rough adjustment of X value
   Tentatively fix A/C head arm screws ① and ② by the method described in Page 21 "Replacement 3".
   Playback the alignment tape (VROATSV) and shortcircuit TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.
   Move the A/C head with the X value adjustment gear driver (JiGDRiVER-6) by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: When the A/C head is adjusted, adjust so that the maximum envelop waveform is obtained nearest the position of initial setting made in Page 21.)

③ Next, change the alignment tape to VROEFZCS or VROEFZHS to playback. Press the tracking button (+), (–) and change the envelope waveform from max to min and from min to max. At this time adjust the height of supply and take-up side guide roller with the adjustment driver (JiGDRiVERH-4) so that the envelope waveform changes nearly parallel.
④ If the tape is lifted or sunk from the helical lead surface, the PB CHROMA envelope waveform appears as shown in Figure 4-35.
⑤ Press the tracking button (+), (–) and make sure that the envelope waveform changes nearly parallel.
⑥ Finally check tape crease near the reverse guide. If tape crease is found, remove it as stated in Page 22 "HEIGHT ADJUSTMENT OF REVERSE GUIDE" item 3.

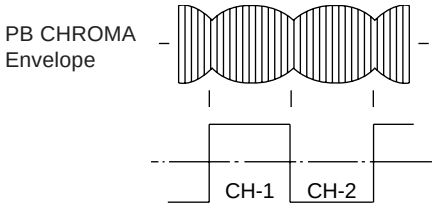


Figure 4-34.

4. A/C head X value adjustment
① Tentatively fix A/C head arm screws ① and ② by the method described in Page 21 "Replacement 3".
② Playback the alignment tape (VROEFZCS or VROEFZHS), and shortcircuit TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.

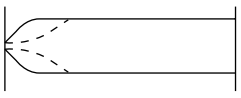
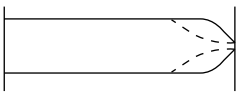
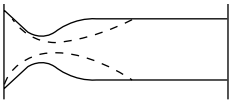
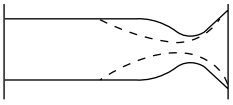
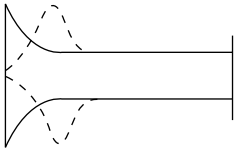
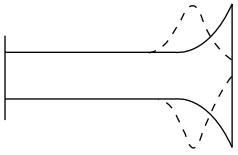
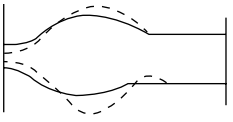
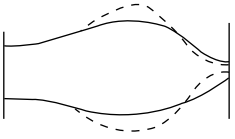
	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
				
				
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the envelope.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the envelope.

Figure 4-35.

③ Move the A/C head with the X value adjustment gear driver by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: At this time adjust so as to get the maximum envelope waveform nearest the A/C head position which has been set in case of X value rough adjustment as stated in Page 23, 3- ②.)
④ Tighten finally the screws ① and ②. Be sure to tighten at first the screw ① and then the screw ②. Final tightening torque is 0.6N·m (If the screw ② is tightened first, the X value may deviate.)
⑤ Adjust the playback switching point (Refer to the electric adjustment method.)
⑥ Playback the self-picture-recorded tape, and check the flatness of envelope waveform and sound.

Notes:
When the A/C head X value adjustment is performed, be sure to perform at first X value rough adjustment (refer to Page 23, 3-②).

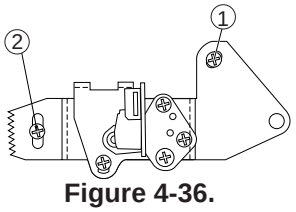


Figure 4-36.

REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the mechanism from the main PWB (refer to Page 8 item 1. When removing the mechanism from the main PWB").

- **Removal (Follow the order of indicated numbers.)**

1. Remove the reel belt ①.
2. Remove the three screws ②.

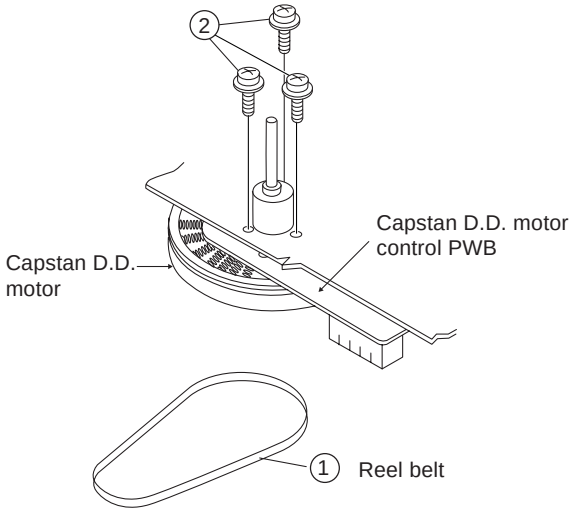


Figure 4-37.

- **Reassembly**

1. Taking care so that the capstan shaft does not contact the mechanism chassis, set its position on the mechanism chassis, and then install with the three screws.
2. Install the reel belt.

Notes:

1. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
2. Set the tape, and check for the tape crease near the reverse guide in the playback mode. Adjust the A/C head and azimuth as stated in Page 21 item 2. If crease is found, adjust as stated in Page 22 "HEIGHT ADJUSTMENT OF REVERSE GUIDE".

REPLACEMENT OF DRUM D.D. MOTOR

1. Set the ejection mode.
2. Withdraw the main power plug from the socket.

- **Removal (Perform in numerical order.)**

1. Disconnect the FFC cable ①.
2. Unscrew the D.D. stator assembly fixing screws ②.
3. Take out the D.D. stator assembly ③.
4. Unscrew the D.D. rotor assembly fixing screws ④.
5. Take out the D.D. rotor assembly ⑤.

Notes:

1. In removing the D.D. stator assembly, part of the drum earth spring pops out of the pre-load collar. Be careful not to lose it.
2. Install, so that the D.D. rotor ass'y and upper drum ass'y mounting direction check holes align. (Align the upper drum dent with the rotor hole.)
3. Be careful not to damage the upper drum or the video head.
4. Protect the hole elements from shock due to contact with D.D. stator or D.D. rotor ass'y.
5. After installation adjust the playback switching point for adjustment of servo circuit.

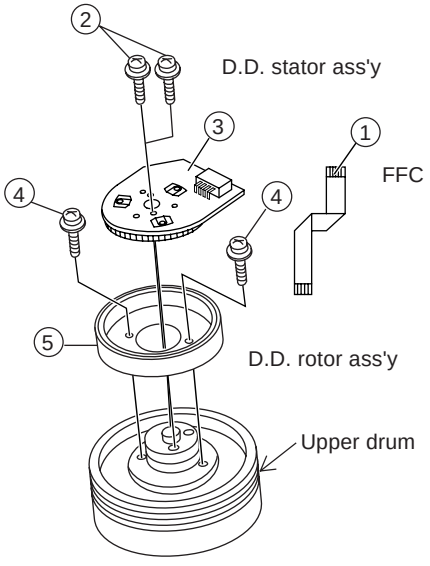


Figure 4-38.

REPLACING THE UPPER AND LOWER DRUM ASSEMBLY

• Replacement (Perform in the numerical order)
① Remove the motor as stated in Page 25 D.D. motor replacement.
② Remove the drum earth brush ass'y ②.
③ Remove the drum base ③ from the upper and lower drum assembly ①.

[Cares when replacing the drum]

1. Be careful so that the drum earth brush is not lost.
2. Do not touch directly the drum surface.
3. Fit gently the screwdriver to the screws.
4. Since the drum assembly is an extremely precise assembly, it must be handled with utmost care.
5. Make sure that the drum surface is free from dust, dirt and foreign substances.
6. After replacing the drum be sure to perform the tape running adjustment.
   After that, perform also the electrical adjustment.
   • Playback switching point adjustment
   • X-position adjustment and check
   • Standard and x-3 slow tracking adjustment
7. After replacing the drum clean the drum.

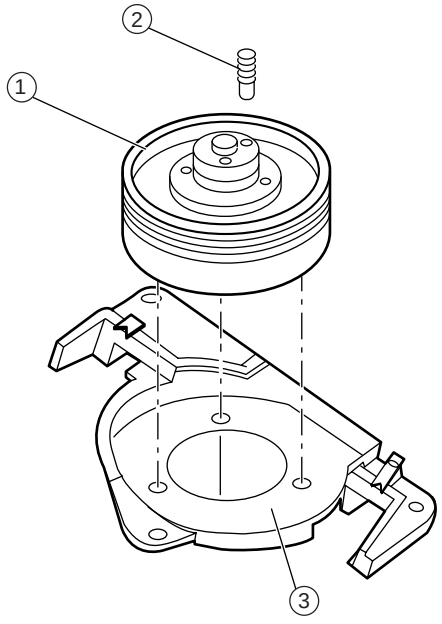


Figure 4-39.

ASSEMBLING OF PHASE MATCHING MECHANISM COMPONENTS

- **Assemble the phase matching mechanism components in the following order.**

1. Assemble the pinch roller assembly and pinch drive cam.
2. Mounting the shifter (on the back of the mechanism chassis).
3. Mounting the master cam (on the back of the mechanism chassis).
4. Assemble the connection gear, slow brake and loading motor parts.

• Pinch drive cam and pinch roller assembling method.

(Place the following parts in position in numerical order.)
(1)Reverse drive lever ①
(2)Reverse guide spring ②
(3)Reverse guide lever ass'y ③
(4)Reverse guide height adjusting nut ④
(5)Pinch drive cam ⑤
(6)Pinch roller ass'y ⑥
(7)Open lever ⑦

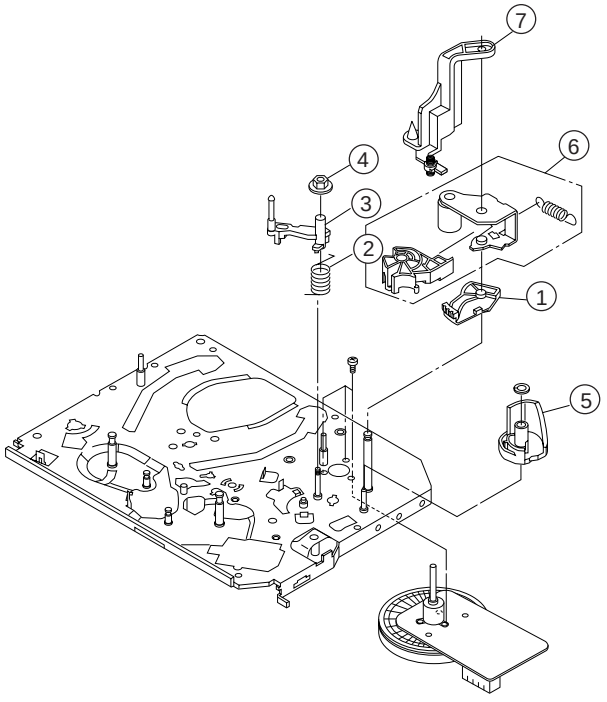


Figure 4-40.

①Insert Reverse Guide Lever Ass'y

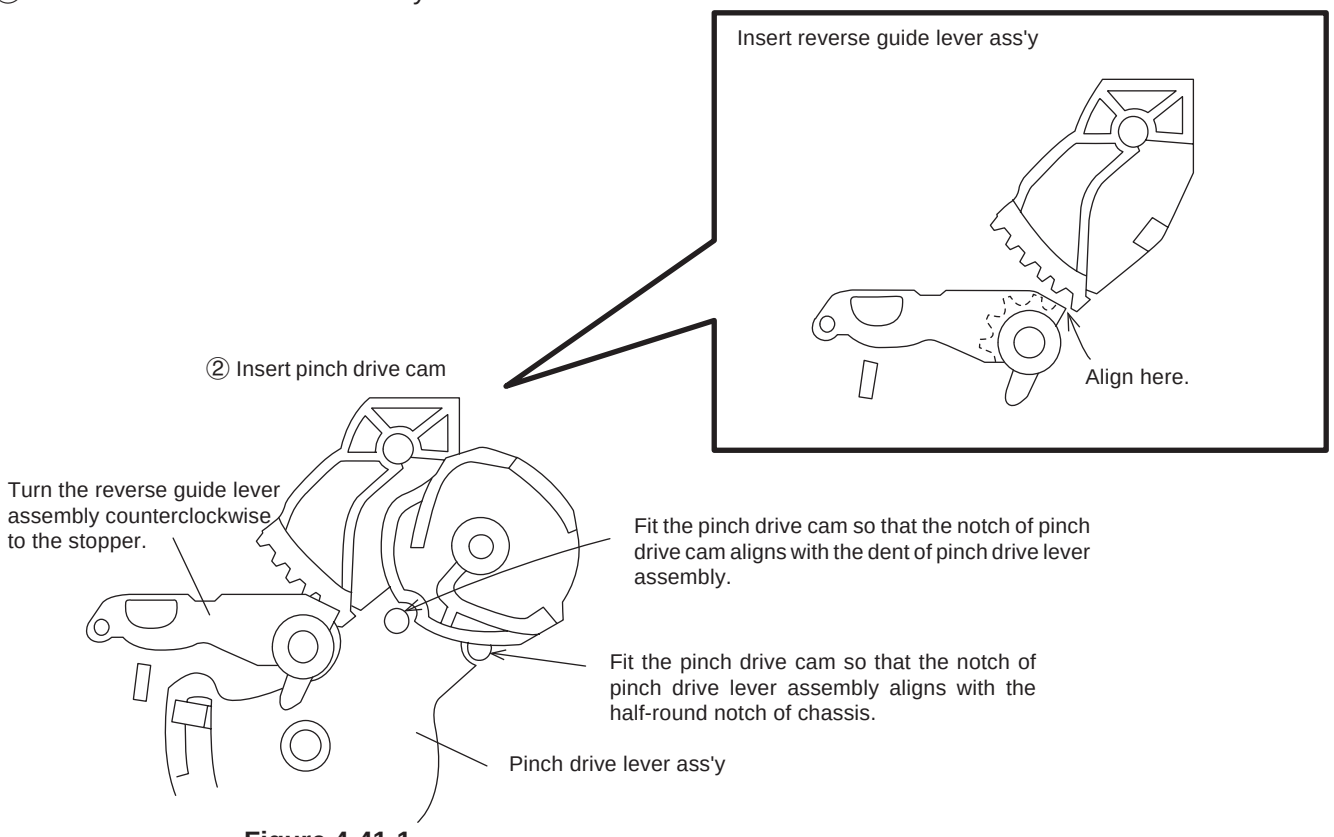

Insert reverse guide lever ass'y
Align here.
② Insert pinch drive cam
Turn the reverse guide lever assembly counterclockwise to the stopper.
Fit the pinch drive cam so that the notch of pinch drive cam aligns with the dent of pinch drive lever assembly.
Fit the pinch drive cam so that the notch of pinch drive lever assembly aligns with the half-round notch of chassis.
Pinch drive lever ass'y

Figure 4-41-1.

②Insert Pinch Roller/Pinch Double Action Lever Ass'y.

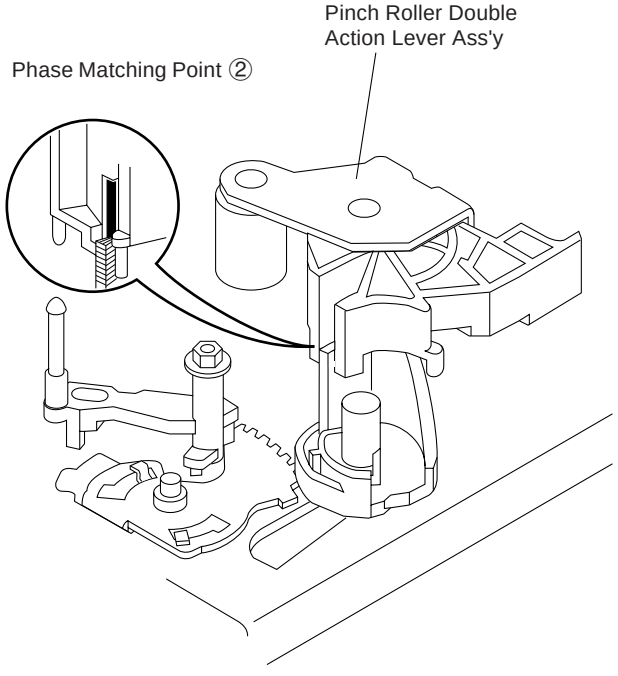


Figure 4-41-2.

③Insert Open Lever.

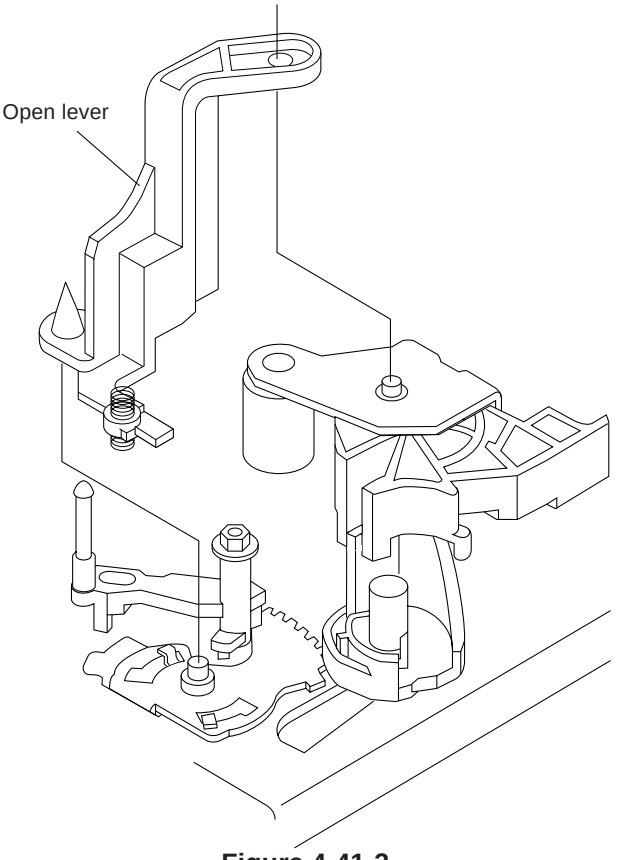
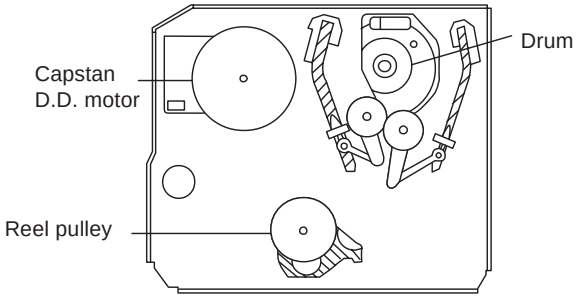


Figure 4-41-3.

INSTALLING THE SHIFTER



(Bottom side of mechanism chassis)

Figure 4-42.

1. Make sure that the loading gear is at the point ① as shown below.
2. Install, paying attention to insert point ⑤ and release point ③.
3. For the phase matching at the insert point ①, see the point ② as shown below.
4. Finally fix the inserts ① and ④.

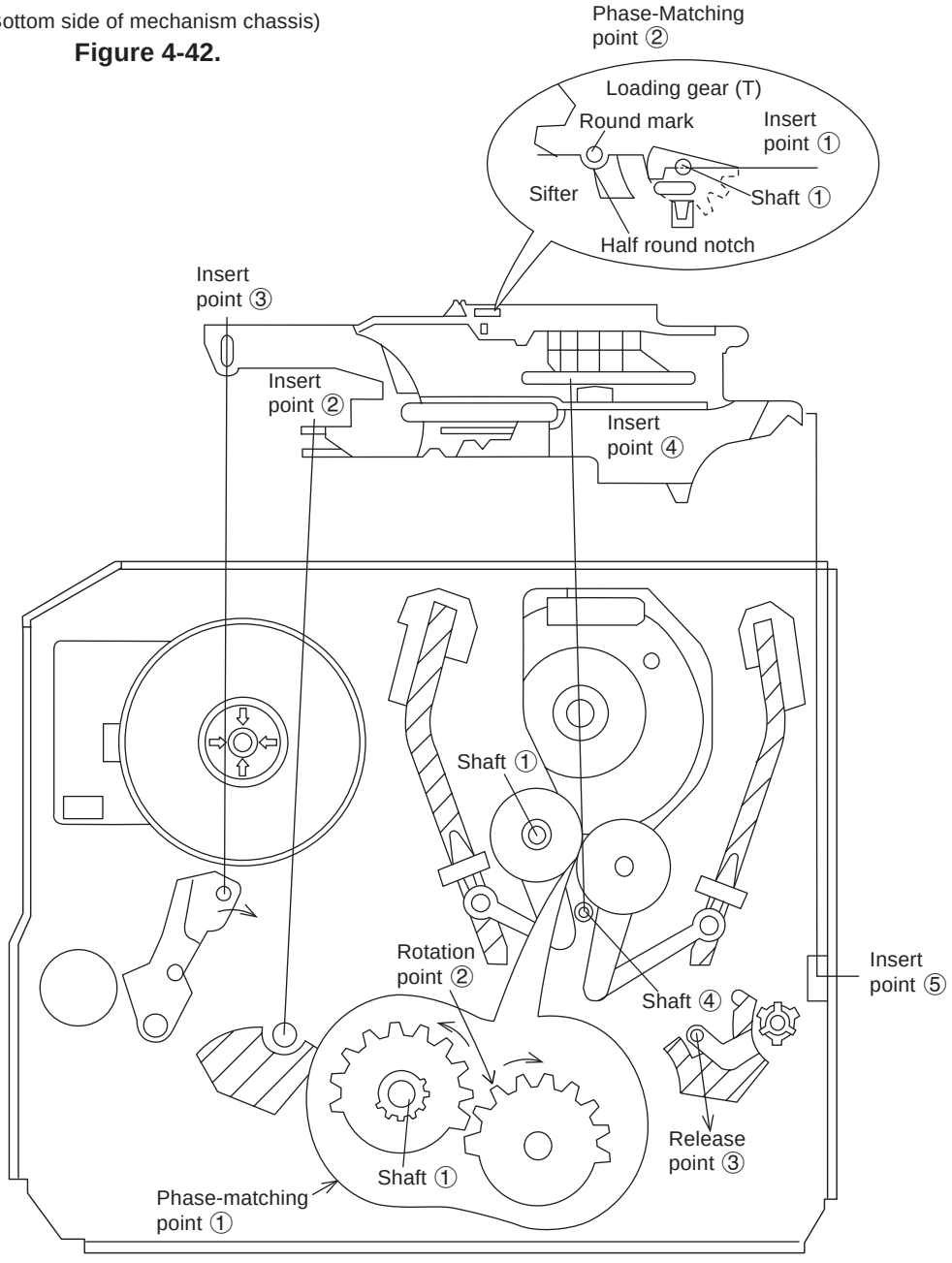


Figure 4-43.

INSTALLING THE MASTER CAM (AT REAR SIDE OF MECHANISM CHASSIS)

1. Make sure beforehand that the shifter is at the point as shown below.
2. Place the master cam in the position as shown below.

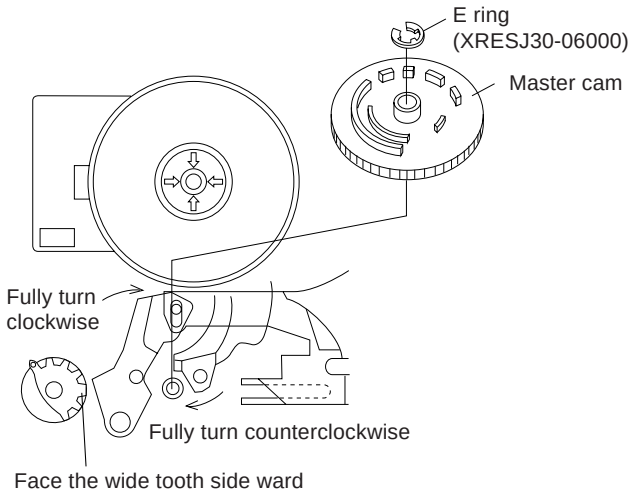


Figure 4-44-1.

Note:
See the figure below for the phase matching between the master cam and the casecon drive gear.

3. Finally fix with the E ring.

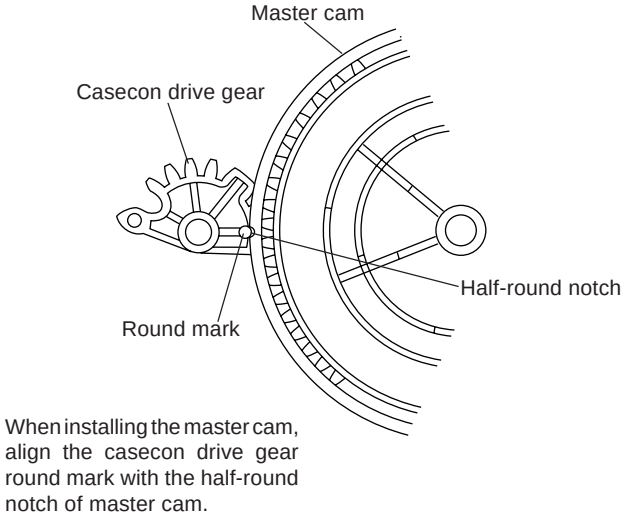

Master cam
Casecon drive gear
Half-round notch
Round mark
When installing the master cam, align the casecon drive gear round mark with the half-round notch of master cam.

Figure 4-44-2.

REPLACEMENT OF LOADING MOTOR

- **Removal**

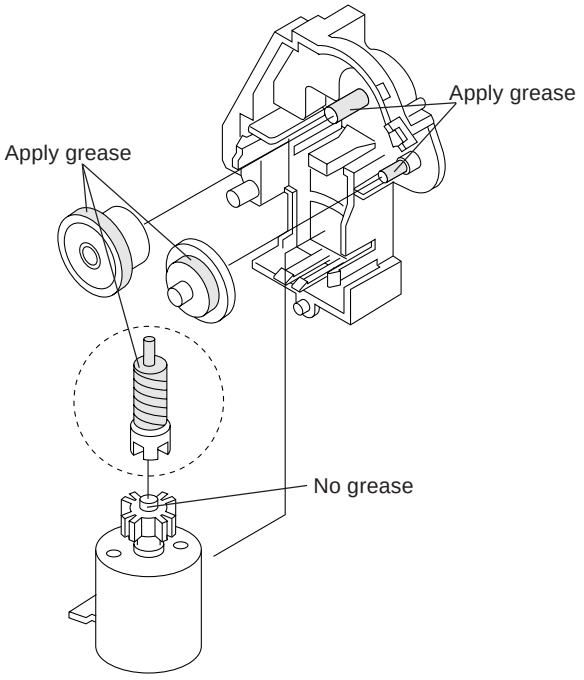


Figure 4-45.

- **Replacement**

Remove the loading motor, and install the replacement loading motor as shown below.

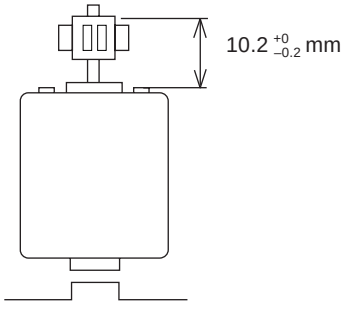


Figure 4-46.

The loading motor pressing-in must be less than 14.7 N (1500 gf).

Adjust the distance between motor and pulley to 10.2 $^{+0}_{-0.2}$ mm).

ASSEMBLY OF CASSETTE HOUSING

1. Drive Gear and R Drive angle ass'y

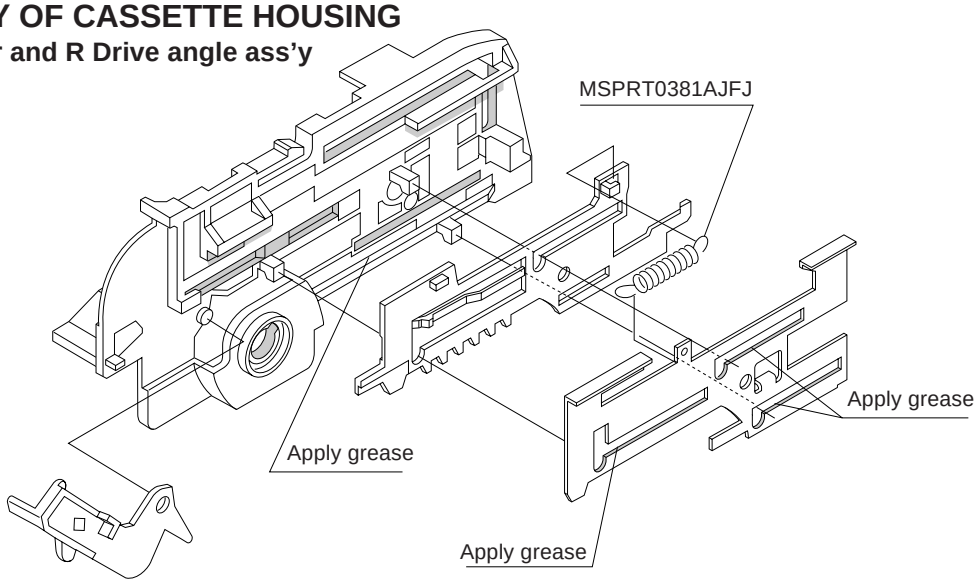
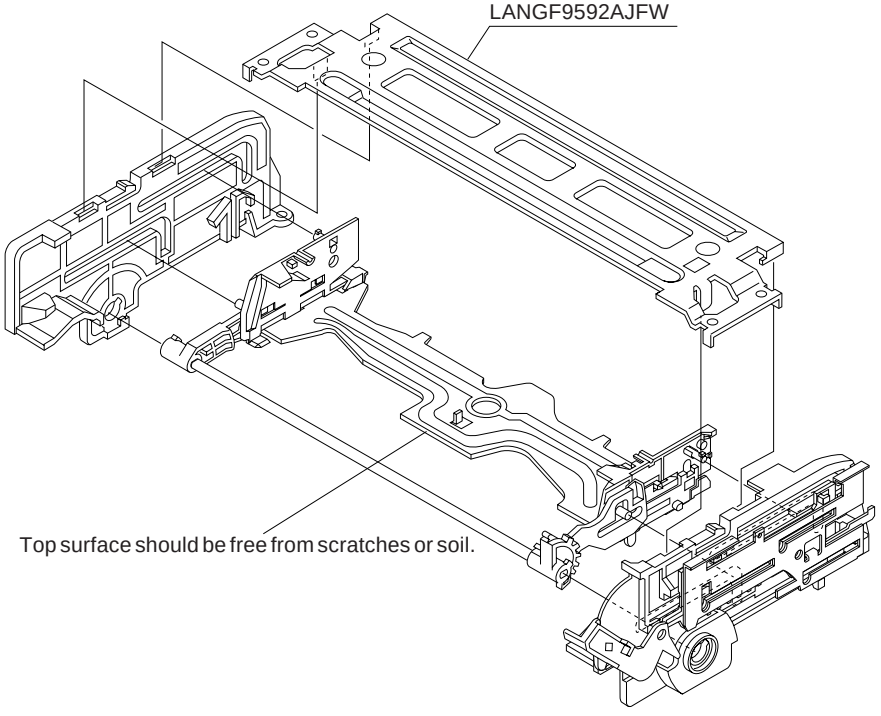


Figure 4-47.

2. Synchro Gear, Drive Gear L and Drive Gear R



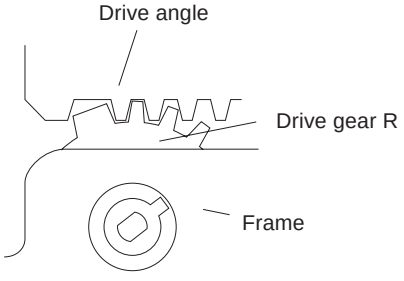


Figure 4-48.

5. ELECTRICAL ADJUSTMENT

Notes:

- **Before the adjustment:**
  Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.
  Check that the mechanism and all electric components are in good working condition prior to the adjustments,otherwise adjustments can not be completed.

- **Instruments required:**
  - Color TV monitor
  - Audio signal generator
  - Blank video cassette tape
  - Screwdriver for adjustment
  - RF signal generator
  - Dual-trace oscilloscope
  - AC milli-voltmeter
  - Alignment tape (VROEFZCS)
  - Color bar generator

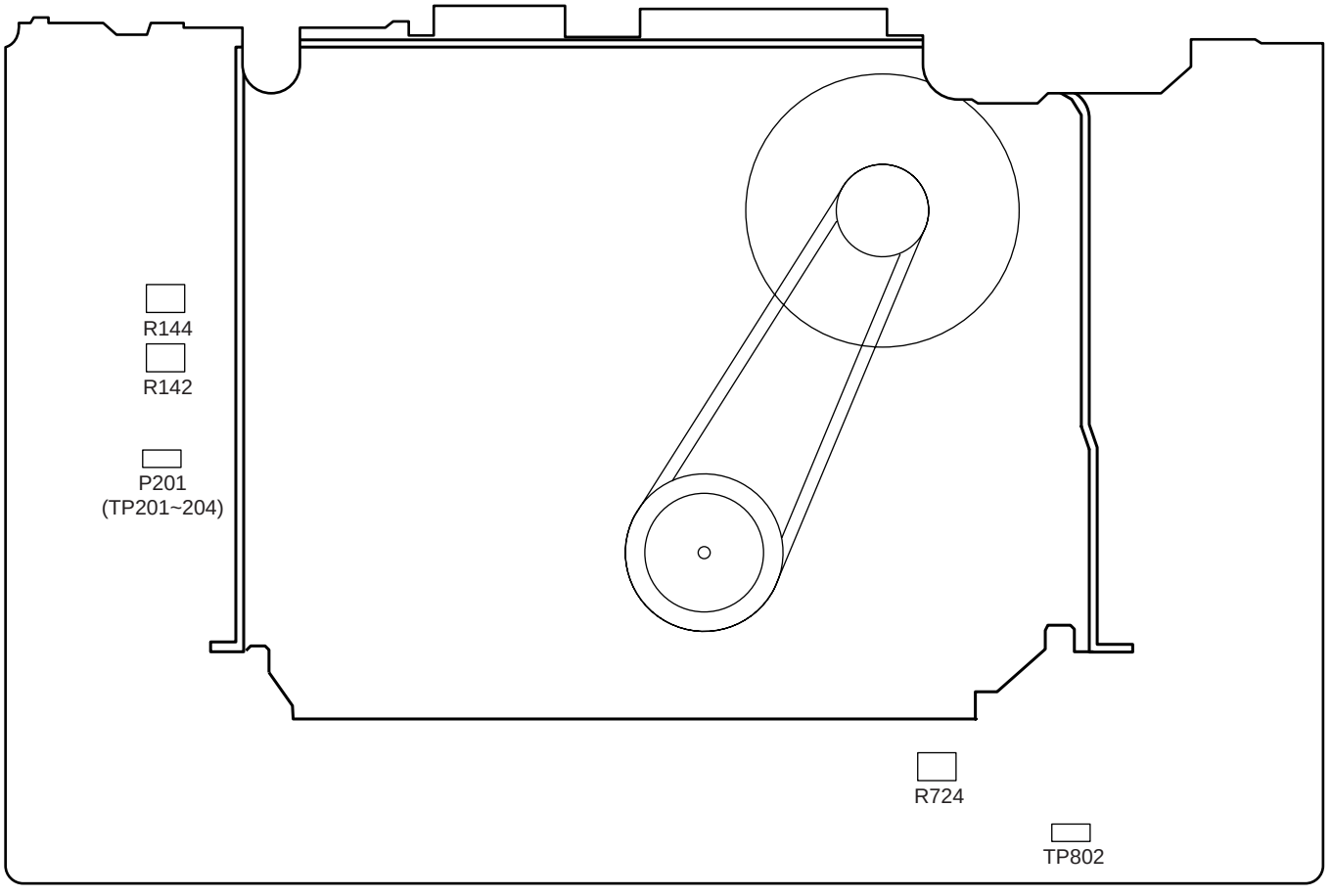


Figure 5-1.

SERVO CIRCUIT ADJUSTMENT

5-1 ADJUSTMENT OF HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope
Mode	Playback
Cassette	Alignment tape (VROEFZCS)
Test point	VIDEO OUT jack to CH2 TP202 (Sig.)~TP203 (GND) to CH1
Control	R724 Head switching point adjustment control
Specification	5.5 ± 0.5H (lines)

1. Remove the front panel and play the alignment tape.
2. Connect a dual-trace oscilloscope to the VIDEO OUT jack and TP202 (Sig.) and TP203 (GND).
   (Trigger the oscilloscope with the head switching pulse on TP202.)
3. Playback the alignment tape, and then short circuit between TP802 on the main PWB, and press both CH button (+) and CH button (–) at same time.
4. Adjust R724 so that the leading edge of the head switching pulse is 5.5H (lines) ahead of the vertical sync as shown in Figure 5-2.
5. Cancel the short circuited.

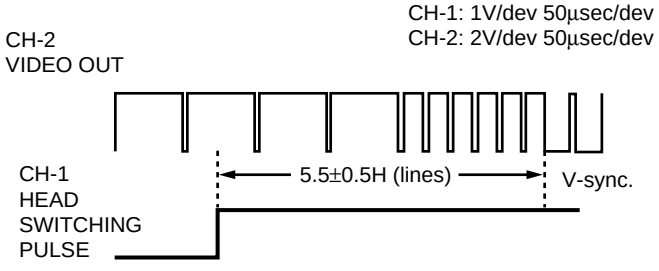


Figure 5-2.

5-2 ADJUSTMENT OF FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Color TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below 2)
Control	Tracking control buttons(+) or (–)
Specification	No vertical jitter of picture

1. Play a cassette which was recorded by the unit in SP mode.
2. Press the PAUSE/STILL button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (–) TRACKING buttons so that the vertical jitter of the picture is minimized.
4. Play and freeze the self-recorded tape in EP mode and make sure vertical jitter of the picture is not noticeable.

Note:

1 The FV goes back to the it's initial state when the unit is put into the system controller reset mode due to power failure, etc.
In this case, preset the FV once again.

2 Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

5-3 CHECKING OF OFF TRACK

Measuring instrument	Color TV monitor
Mode	Playback
Cassette	Self-recorded tape (EP mode) (See Note below)
Control	Tracking control buttons(+) or (–)
Specification	No Poor picture and Hi-Fi sound

1. Play a cassette which was recorded by the unit in EP mode.
2. Short circuit between TP802 on the main PWB, and press both CH button (+) and CH button (–) at same time.
3. Press the tracking buttons (+) and (–) 20 times each to bring the tracking off center. Make sure that:
   1) There is nothing unusual on the playback screen.
   2) There is nothing unusual in the Hi-Fi sound (for the Hi-Fi models only).
4. Cancel the short circuit.

Note:

Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

MTS CIRCUIT ADJUSTMENT (HI-FI MODELS ONLY)

5-4 ADJUSTMENT OF SIF-INPUT LEVEL

Measuring instrument	AC milli-voltmeter and RF signal generator.
Mode	E-E
Input signal	RF CH-10 (at 300Hz 30% MOD.)
Test point	AUDIO OUT jack (R channel)
Control	R142(S-IF ADJ.)
Specification	Right CH output Minimum

1. Feed the RF signal CH-10 (at 300Hz 30% MOD.) to antenna terminal.
2. Connect the AC milli-voltmeter to right channel output terminal.
3. Set the audio signal to 300Hz and the modulation facter to 30% (Left channel only) and adjust R142 (S-IF ADJ.) so that the right channel output becomes minimized.

5-5 ADJUSTMENT OF STEREO SEPARATION

Measuring instrument	AC milli-voltmeter and RF signal generator.
Mode	E-E
Input signal	RF CH-10 (at 3kHz 30% MOD.)
Test point	AUDIO OUT jack (R channel)
Control	R144 (SEPARATION ADJ.)
Specification	Right CH output Minimum

1. Feed the RF signal CH-10 (at 3kHz 30% MOD.) to antenna terminal.
2. Connect the AC milli-voltmeter to right channel output terminal.
3. Set the audio signal to 3kHz and the modulation factor to 30% (Left channel only) and adjust R144 (SEPARATION ADJ.) so that the right channel output becomes minimized.
4. Repeat step 5-4 ADJUSTMENT OF SIF-INPUT LEVEL, until obtain a specification.

INITIAL JUMPER SETTING METHOD

Effected Model:Model With VCR+Plus and VCR+Plus,C3 and G-CODE

1.E2PROM Jumper Setting:

1) Set the VCR in standby mode (Power Off).
2) Short circuit the test point (between pins 1 and 2 of TP801), which is located in the front side on the main PWB. Be sure that all items in the fluorescent display tube light up into test mode.
3) Using Channel (+) and Channel (-), select the right jumper from JP0 to JP7, which appear in the fluorescent display tube.
   Press Display button to set the function ("1") and press Cancel button to set it as ("0").
   * When press Display button, the jumper item will be blinking.
   * When press Cancel button, the jumper item will remain there without blinking.
4) Repeat step 2), then plug off the socket.

Bit	Model Name / Jumper Name	A598U	H995U	H996U H997U H9977U	H998U
0	AUX2	1	1	1	1
1	HiFi	0	1	1	1
2	R/C Locator	0	0	0	1
3	Cable Box	0	0	1	1
4	C/C Cross Key	1	1	1	1
5	Auto Enhance	0	0	0	0
6	DST / EDS	1	1	1	1
7	G-Code	0	0	0	0

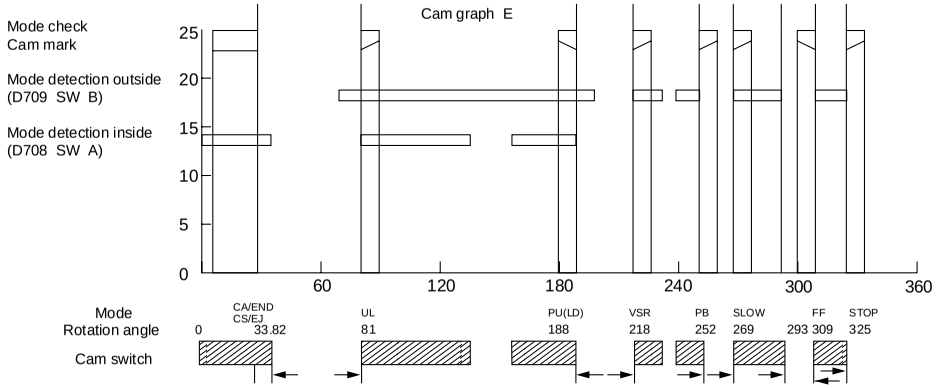
1= "Display blinking"
0= "Display remain"

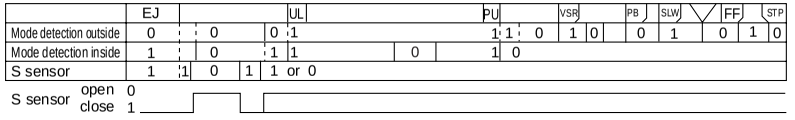
6. MECHANISM OPERATION FLOWCHART AND TROUBLESHOOTING GUIDE

MECHANISM OPERATION FLOWCHART

* This flowchart describes the outline of the mechanism's operation, but does not give its details.

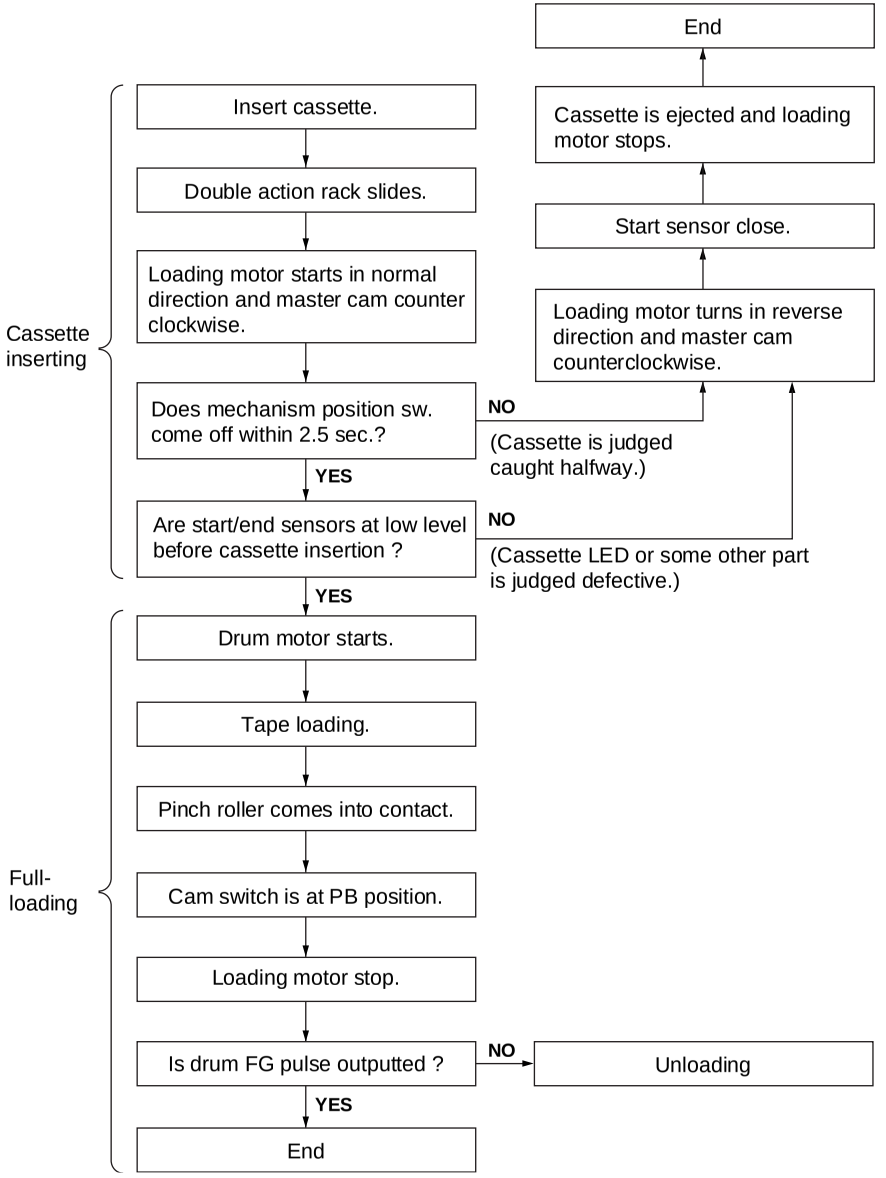
F mechanical timing



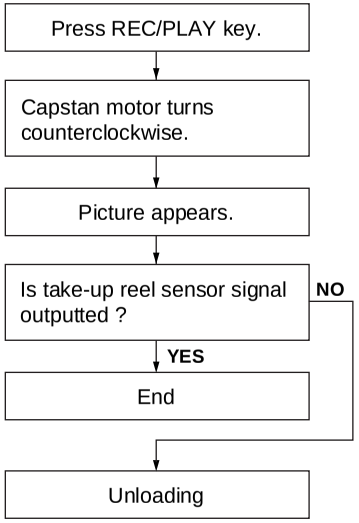


	Mode detection inside Sensor A	Mode detection outside Sensor B
CS/EJ	1	0
ULD	1	1
PU LD	1	1
VSR	0	1
PB	0	0
STILL	0	1
FF	0	0
STOP	0	0

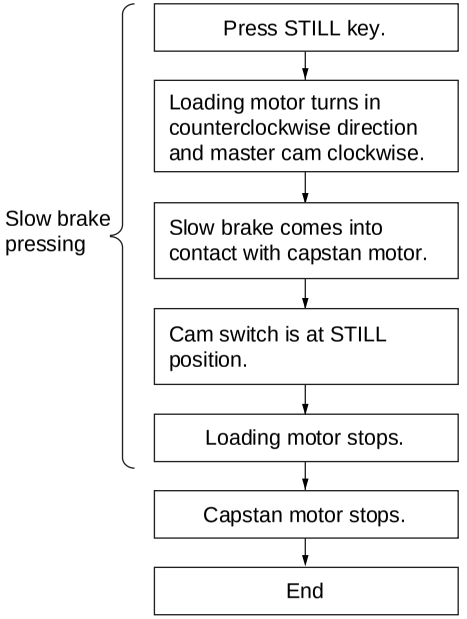
CASSETTE INSERTION → STOP


Insert cassette.
Double action rack slides.
Loading motor starts in normal direction and master cam counter clockwise.
Does mechanism position sw. come off within 2.5 sec.?
NO
(Cassette is judged caught halfway.)
YES
Are start/end sensors at low level before cassette insertion ?
NO
(Cassette LED or some other part is judged defective.)
YES
Cassette inserting
Drum motor starts.
Tape loading.
Pinch roller comes into contact.
Cam switch is at PB position.
Loading motor stop.
Is drum FG pulse outputted ?
NO
Unloading
YES
End
Full-loading
Loading motor turns in reverse direction and master cam counterclockwise.
Start sensor close.
Cassette is ejected and loading motor stops.
End

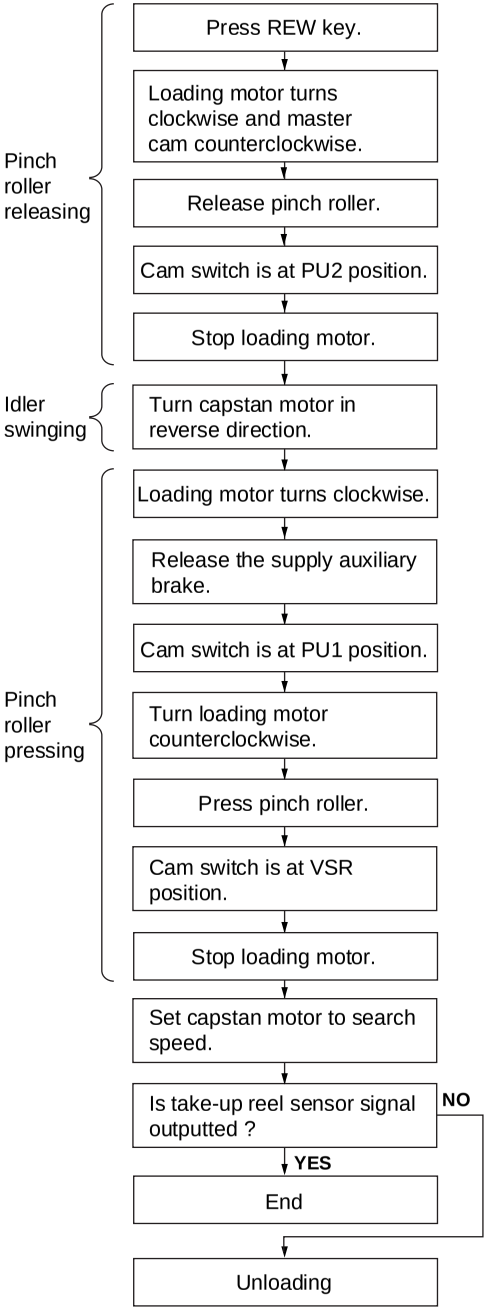
STOP → REC/PLAY



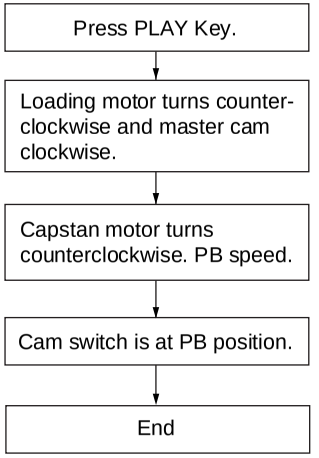
PLAY → STILL


Slow brake pressing
Press STILL key.
Loading motor turns in counterclockwise direction and master cam clockwise.
Slow brake comes into contact with capstan motor.
Cam switch is at STILL position.
Loading motor stops.
Capstan motor stops.
End

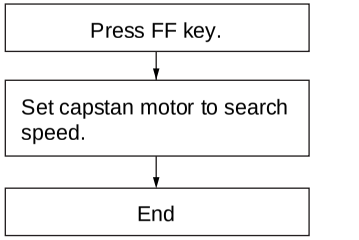
PLAY → VSR



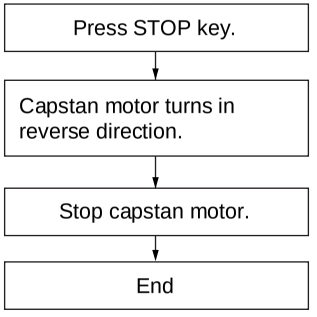
VSR → PLAY

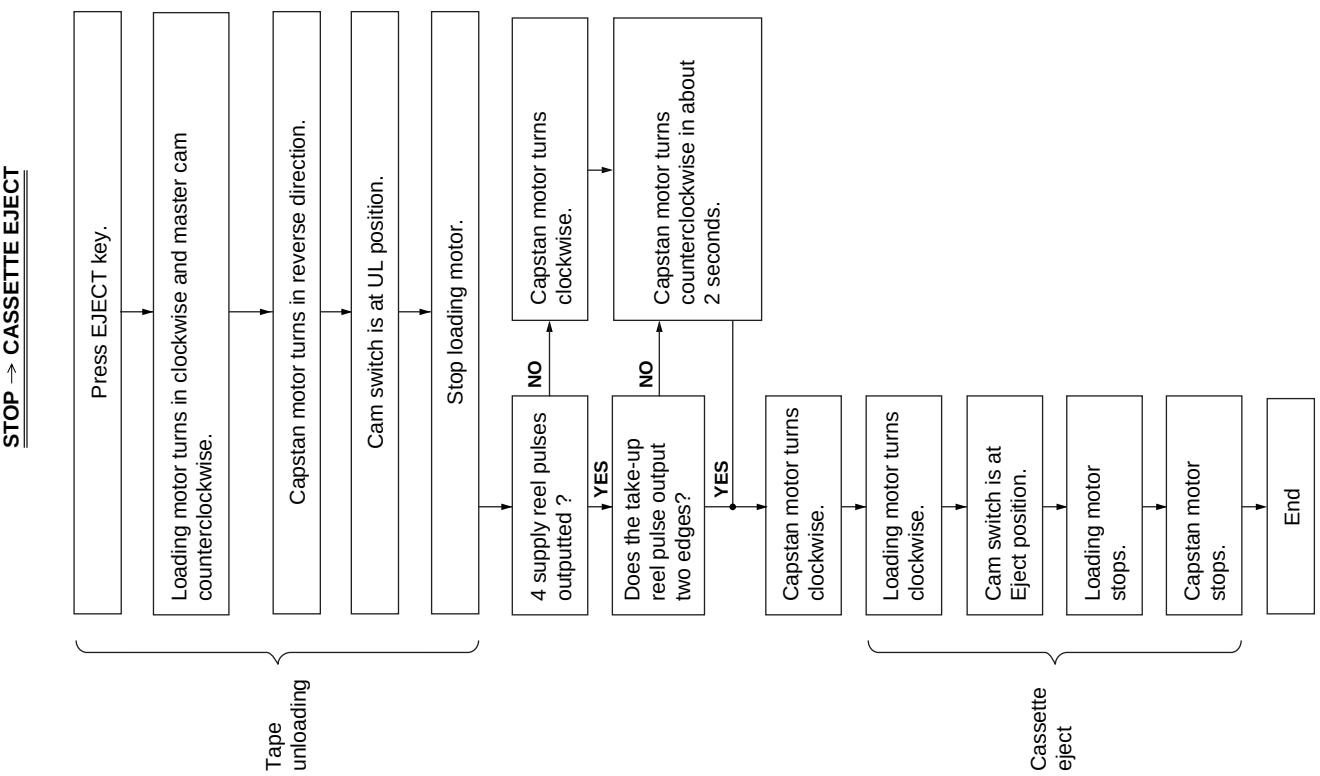

Press PLAY Key.
Loading motor turns counter-clockwise and master cam clockwise.
Capstan motor turns counterclockwise. PB speed.
Cam switch is at PB position.
End

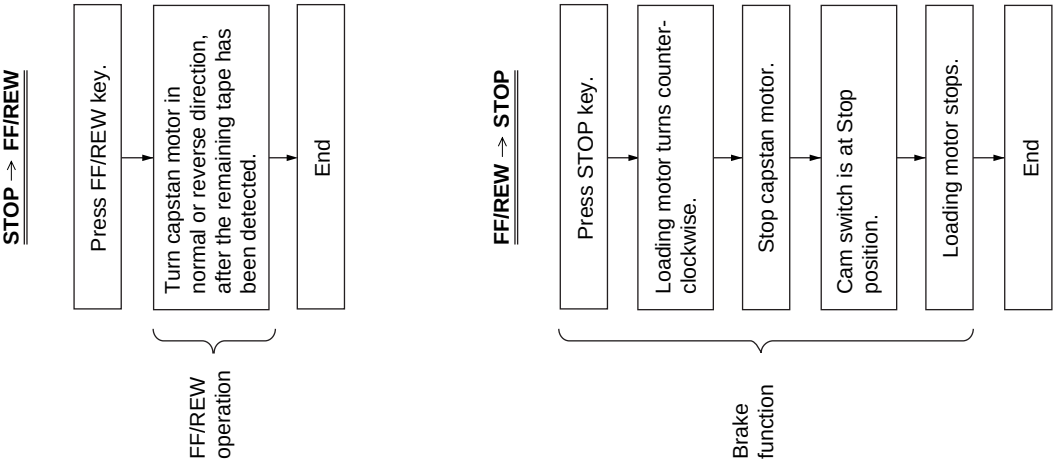
PLAY → VSF



REC/PLAY → STOP

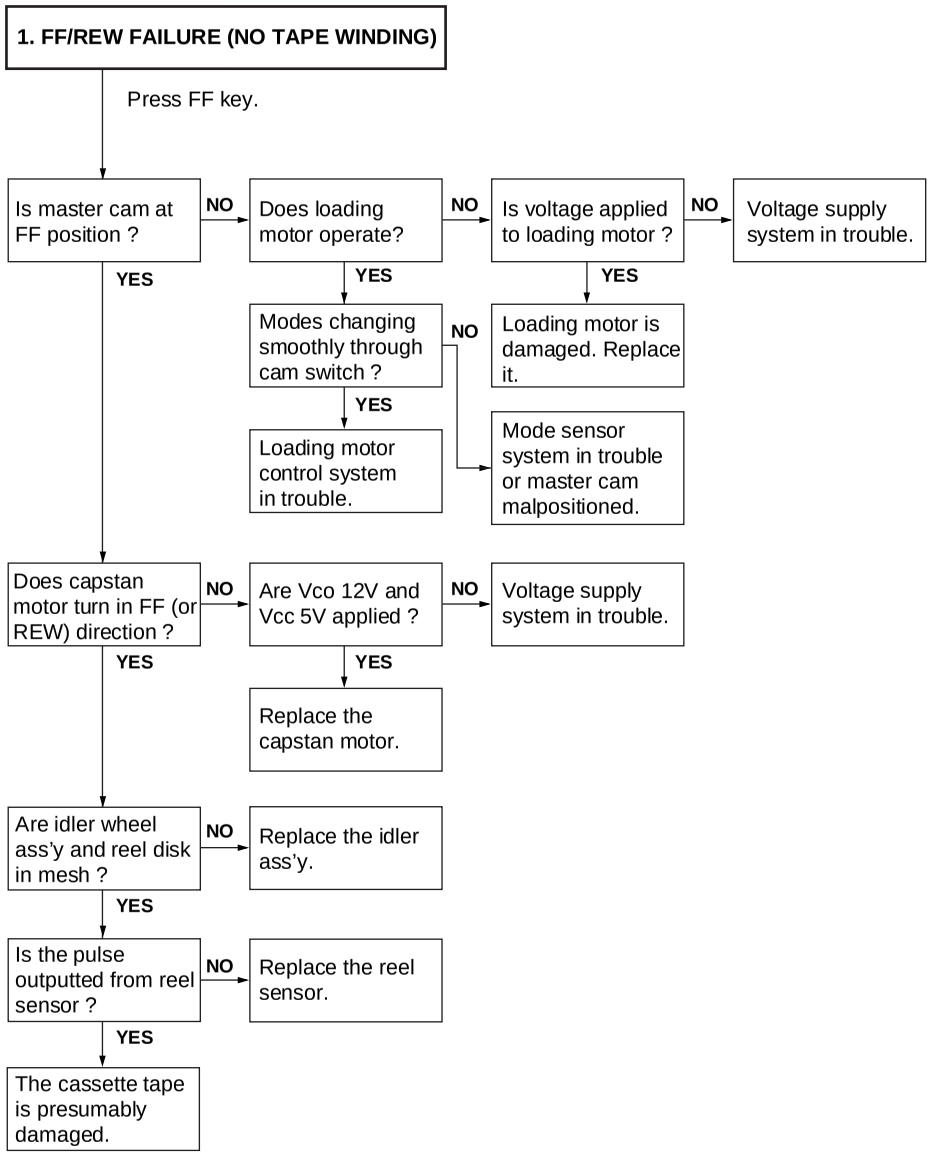



STOP → CASSETTE EJECT
Press EJECT key.
Loading motor turns in clockwise and master cam counterclockwise.
Capstan motor turns in reverse direction.
Cam switch is at UL position.
Stop loading motor.
Tape unloading
4 supply reel pulses outputted ?
NO
Capstan motor turns clockwise.
YES
Does the take-up reel pulse output two edges?
NO
Capstan motor turns counterclockwise in about 2 seconds.
YES
Capstan motor turns clockwise.
Loading motor turns clockwise.
Cam switch is at Eject position.
Loading motor stops.
Capstan motor stops.
End
Cassette eject

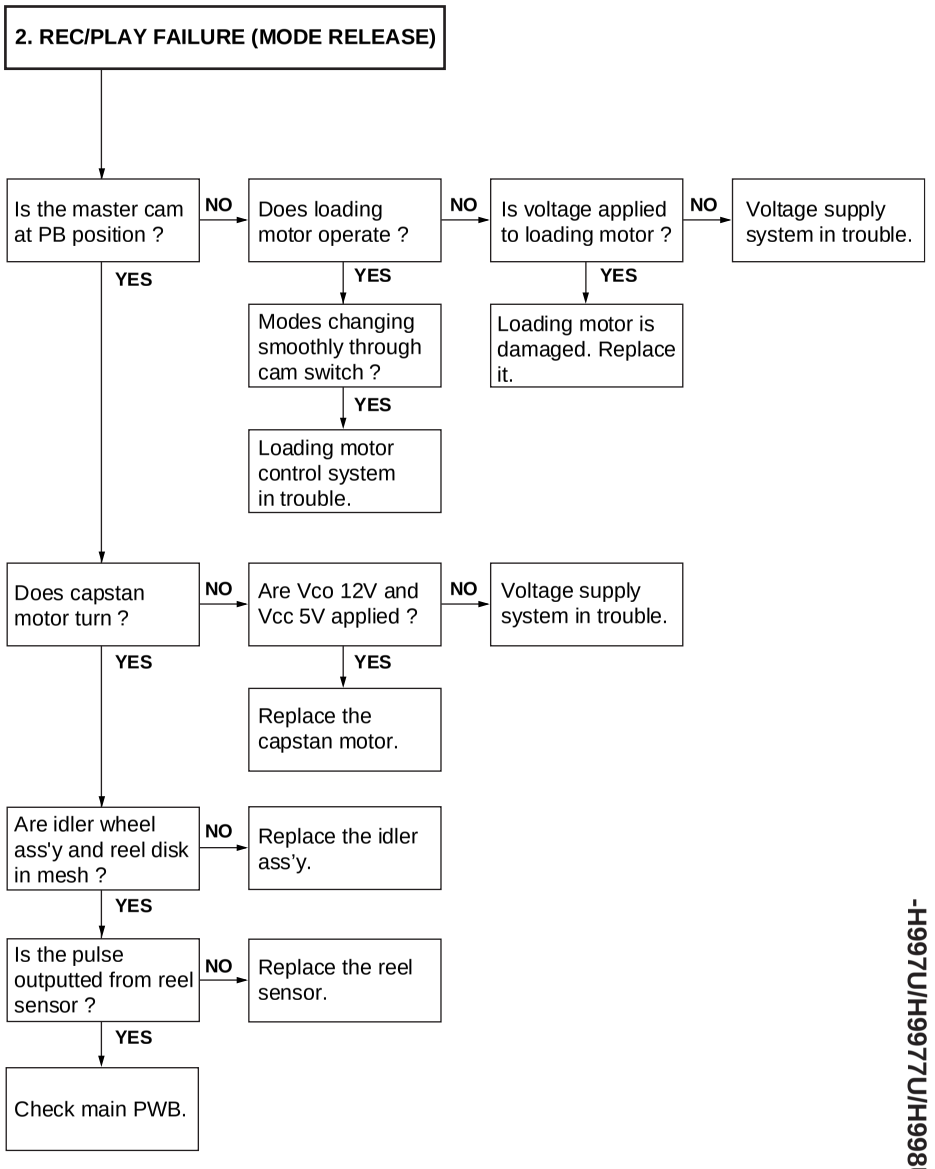

STOP → FF/REW
Press FF/REW key.
Turn capstan motor in normal or reverse direction, after the remaining tape has been detected.
End
FF/REW operation
FF/REW → STOP
Press STOP key.
Loading motor turns counter-clockwise.
Stop capstan motor.
Cam switch is at Stop position.
Loading motor stops.
End
Brake function

MECHANISM TROUBLESHOOTING

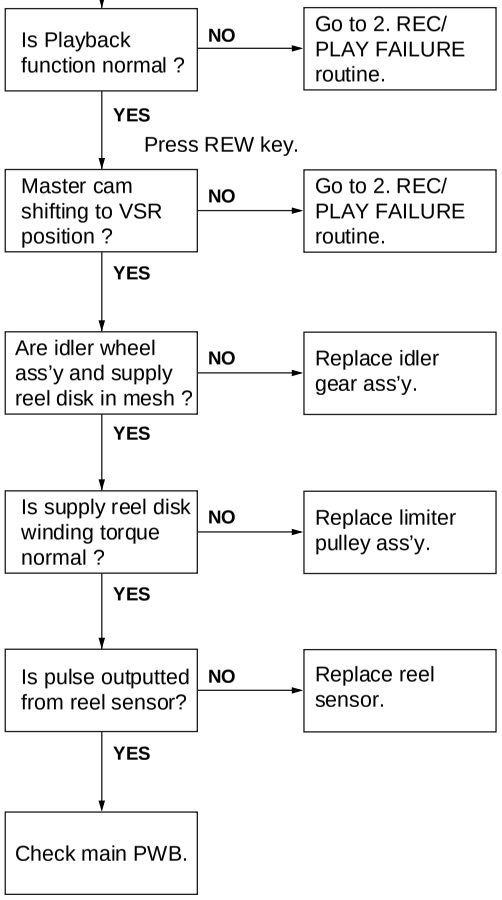
1. FF/REW FAILURE (NO TAPE WINDING)



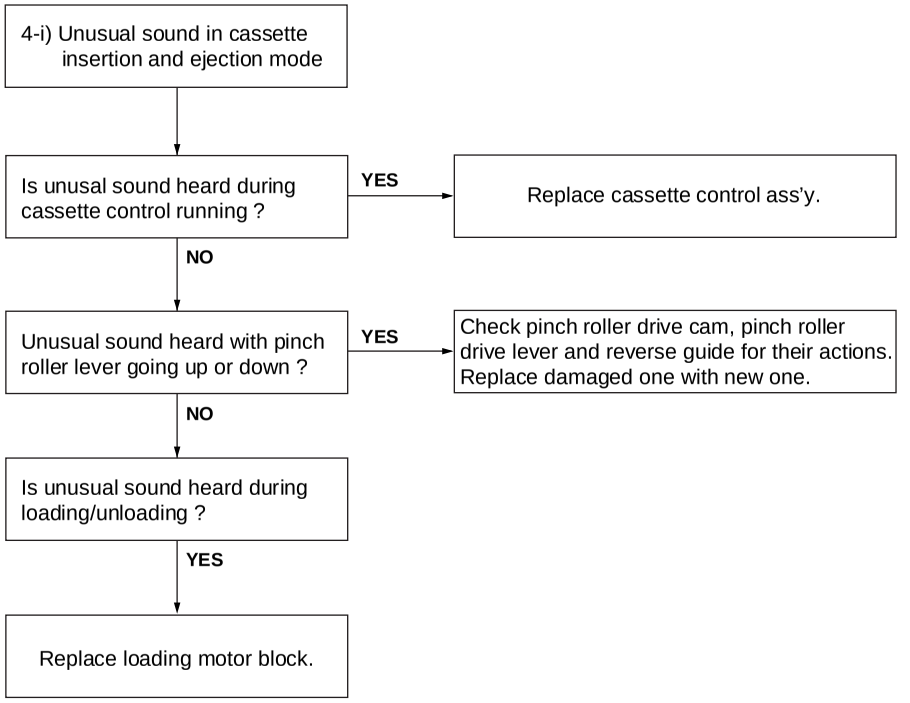
2. REC/PLAY FAILURE (MODE RELEASE)

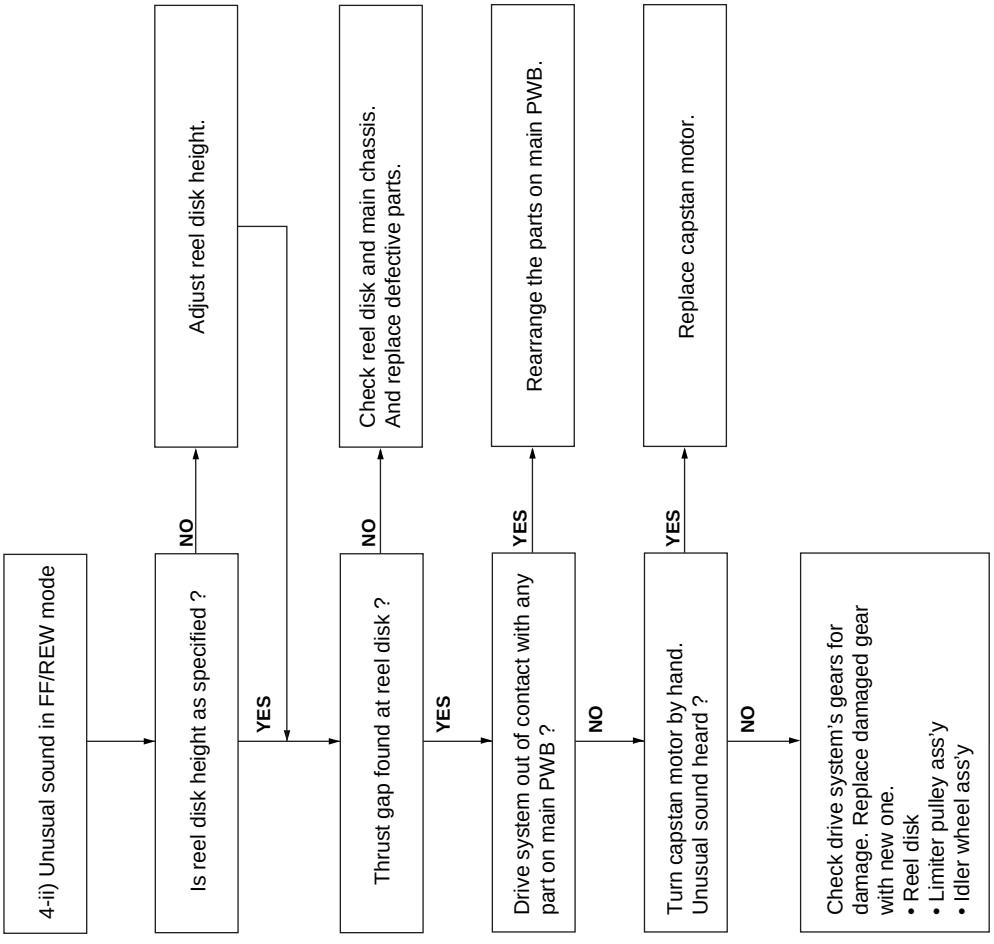


3. WINDING FAILURE AT VSR



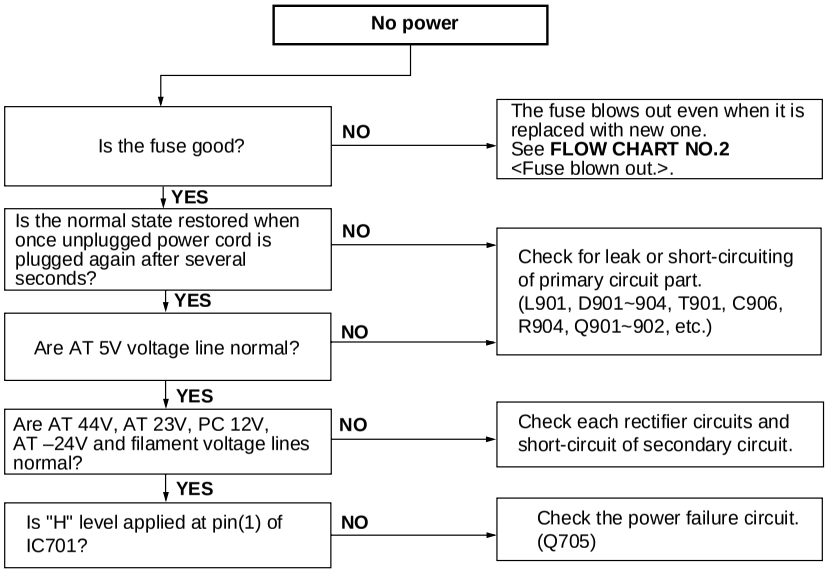
4. UNUSUAL SOUND IN EACH MODE


4-i) Unusual sound in cassette insertion and ejection mode
Is unusal sound heard during cassette control running ?
YES
Replace cassette control ass'y.
NO
Unusual sound heard with pinch roller lever going up or down ?
YES
Check pinch roller drive cam, pinch roller drive lever and reverse guide for their actions. Replace damaged one with new one.
NO
Is unusual sound heard during loading/unloading ?
YES
Replace loading motor block.

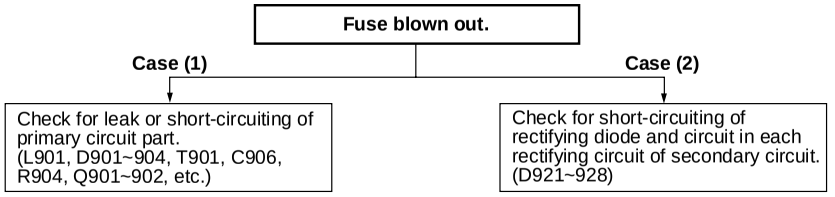

4-ii) Unusual sound in FF/REW mode
Is reel disk height as specified ?
NO
Adjust reel disk height.
YES
Thrust gap found at reel disk ?
NO
Check reel disk and main chassis.
And replace defective parts.
YES
Drive system out of contact with any part on main PWB ?
YES
Rearrange the parts on main PWB.
NO
Turn capstan motor by hand.
Unusual sound heard ?
YES
Replace capstan motor.
NO
Check drive system's gears for damage. Replace damaged gear with new one.
• Reel disk
• Limiter pulley ass'y
• Idler wheel ass'y

7. TROUBLESHOOTING

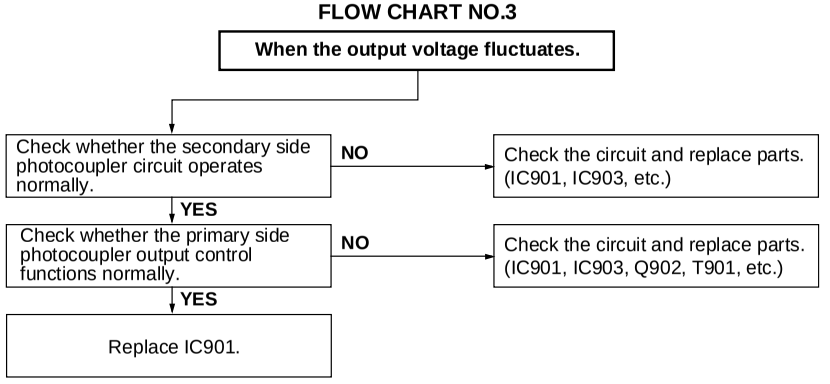
FLOW CHART NO.1


No power
Is the fuse good?
NO
The fuse blows out even when it is replaced with new one. See FLOW CHART NO.2 <Fuse blown out.>.
YES
Is the normal state restored when once unplugged power cord is plugged again after several seconds?
NO
Check for leak or short-circuiting of primary circuit part. (L901, D901~904, T901, C906, R904, Q901~902, etc.)
YES
Are AT 5V voltage line normal?
NO
YES
Are AT 44V, AT 23V, PC 12V, AT –24V and filament voltage lines normal?
NO
Check each rectifier circuits and short-circuit of secondary circuit.
YES
Is "H" level applied at pin(1) of IC701?
NO
Check the power failure circuit. (Q705)

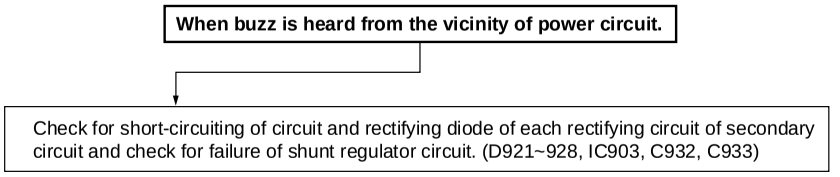
FLOW CHART NO.2


Fuse blown out.
Case (1)
Case (2)
Check for leak or short-circuiting of primary circuit part. (L901, D901~904, T901, C906, R904, Q901~902, etc.)
Check for short-circuiting of rectifying diode and circuit in each rectifying circuit of secondary circuit. (D921~928)

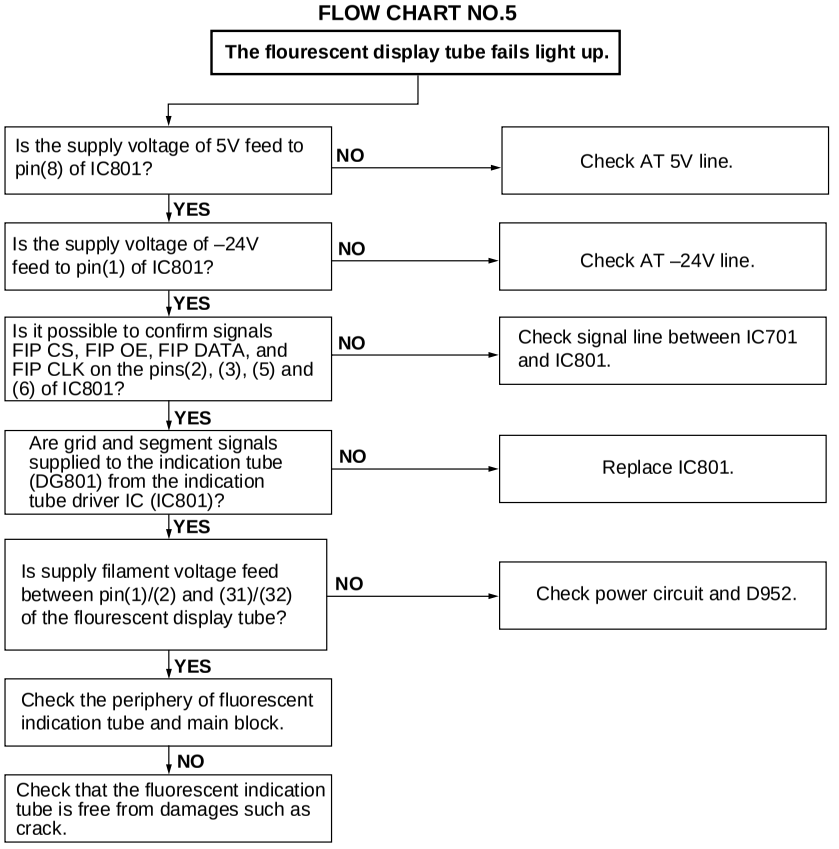
FLOW CHART NO.3


When the output voltage fluctuates.
Check whether the secondary side photocoupler circuit operates normally.
NO
Check the circuit and replace parts. (IC901, IC903, etc.)
YES
Check whether the primary side photocoupler output control functions normally.
NO
Check the circuit and replace parts. (IC901, IC903, Q902, T901, etc.)
YES
Replace IC901.

FLOW CHART NO.4


When buzz is heard from the vicinity of power circuit.
Check for short-circuiting of circuit and rectifying diode of each rectifying circuit of secondary circuit and check for failure of shunt regulator circuit. (D921~928, IC903, C932, C933)

FLOW CHART NO.5


The flourescent display tube fails light up.
Is the supply voltage of 5V feed to pin(8) of IC801?
NO
Check AT 5V line.
YES
Is the supply voltage of –24V feed to pin(1) of IC801?
NO
Check AT –24V line.
YES
Is it possible to confirm signals FIP CS, FIP OE, FIP DATA, and FIP CLK on the pins(2), (3), (5) and (6) of IC801?
NO
Check signal line between IC701 and IC801.
YES
Are grid and segment signals supplied to the indication tube (DG801) from the indication tube driver IC (IC801)?
NO
Replace IC801.
YES
Is supply filament voltage feed between pin(1)/(2) and (31)/(32) of the flourescent display tube?
NO
Check power circuit and D952.
YES
Check the periphery of fluorescent indication tube and main block.
NO
Check that the fluorescent indication tube is free from damages such as crack.

FLOW CHART NO.6

Key-in input is not received.

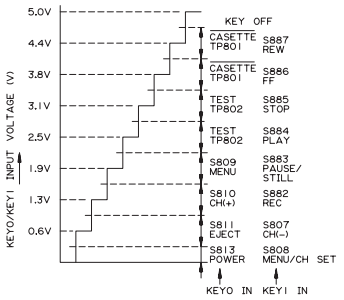
Does the key switch make good contact, when the cassette tape is inserted?

NO → Check switch contact.

YES

Is there the function control voltage inputted at the pins(87) and (88) of IC701?

YES



Check or place the peripheral circuit of IC701.

FLOW CHART NO.7

No operation is possible from the infrared remote control.

Operation is possible from the VCR, but no operation is possible from the infrared remote control.

YES

Is the supply voltage of 5V feed to pin(3) terminal of remote control receiver?

NO → Check AT 5V lines.

YES

Is "L" pulse sent out pin(1) terminal of receiver when the infrared remote control is activated?

NO → Replace the remote control receiver or replace the remote control transmitter if necessary.

YES

Is inputted "L" pulse to pin(5) of IC701?

NO → Check line between at remote control receiver thru to pin(5) of IC701.

YES

Replace IC701.

FLOW CHART NO.8

A cassette tape is not take in.

Are start sensor shutter go to open when the cassette tape is inserted?

NO → Check start sensor shutter.

YES

Does pin(79) of IC701 change from "H" to "L" level when the cassette tape is inserted?

NO → Check line start sensor and all the way up thru to pin(79) of IC701.

YES

Does pin(11) of IC706 go to a "H" (about 1.7V) level when the cassette tape is inserted?

NO → Check line pin(9) of IC701 and all the way up thru to pin(11) of IC706.

YES

Does pin(13) of IC706 change to about 10V when the cassette tape is inserted?

NO → Check IC706.

YES

Is the specified voltage (about 10V) applied at the loading motor terminal when the cassette tape is inserted?

NO → Check between IC706 and loading motor.

YES

Replace loading motor.

FLOW CHART NO.9

A cassette tape is taken in, but ejected at once.

Does the start sensor pulse at pin(79) of IC701 change from "L" to "H" level when the cassette tape is loaded?

NO → Check start sensor and all the way up thru to IC701.

YES

Does the end sensor pulse at pin(85) of IC701 change from "L" to "H" level when the cassette tape is loaded?

NO → Check end sensor and all the way up thru to IC701.

YES

Does the master cam mode shifter operate normally when the cassette tape is loaded?

NO → Check cam switch and all the way up thru to IC701.

YES

Replace IC701.

FLOW CHART NO.10

The cassette tape fails to eject.

- Does the capstan motor start when the EJECT button is pressed?
  - NO → See **FLOW CHART NO.12.**
  - YES ↓
- Does the take-up reel disk turn when the capstan motor is running?
  - NO → Check reel disk and reel drive unit.
  - YES ↓
- Are pulses applied at pin(2) of IC701 when the take-up reel disk is turning?
  - NO → Check take-up reel sensor and all the way up thru to IC701.
  - YES ↓
- Is a "H"(about 1.7V) level applied at pin(12) of IC706 when a reel pules has been inputted?
  - NO → Check pin(90) of IC701.
  - YES ↓
- Is the voltage about 10V sent out of pin(15) of IC706?
  - NO → Check IC706.
  - YES ↓
- Is the specified voltage applied at the loading motor terminal?
  - NO → Check between IC706 and all the way up thru to the loading motor.
  - YES ↓
- Does the loading motor run?
  - NO → Replace loading motor.
  - YES ↓

Replace cassette cam, gear, etc.

FLOW CHART NO.11

No power is turned on.

- Does power control(H) signal at pin(4) of IC701 change from "L" to "H" level?
  - NO → Check IC701.
  - YES ↓
- Does the base of Q951 change from about 5.0V to 4.5V?
  - NO → Check IC701 and all the way up thru to Q951.
  - YES ↓
- Is 5V sent out of the collector of Q951?
  - NO → Check Q951 and the AT 5V line.
  - YES ↓

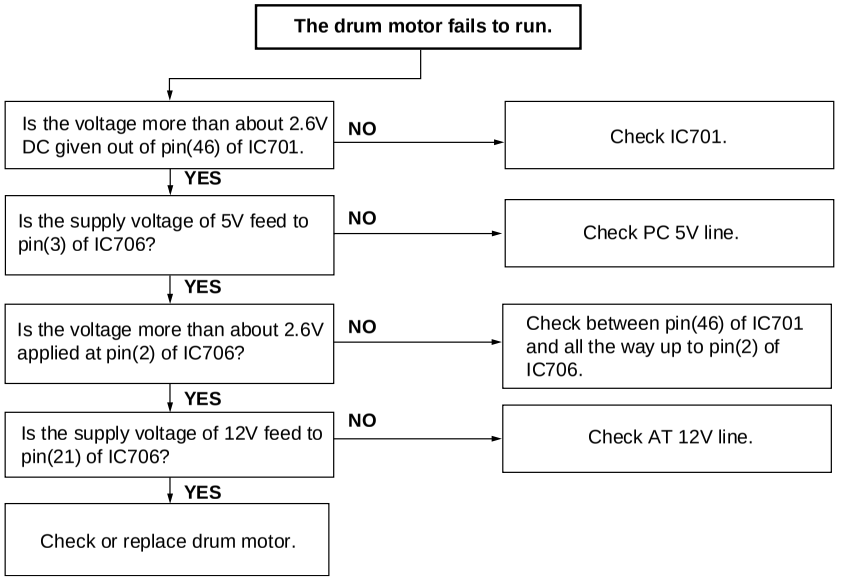
Check peripheral circuits for poor soldering.

FLOW CHART NO.12

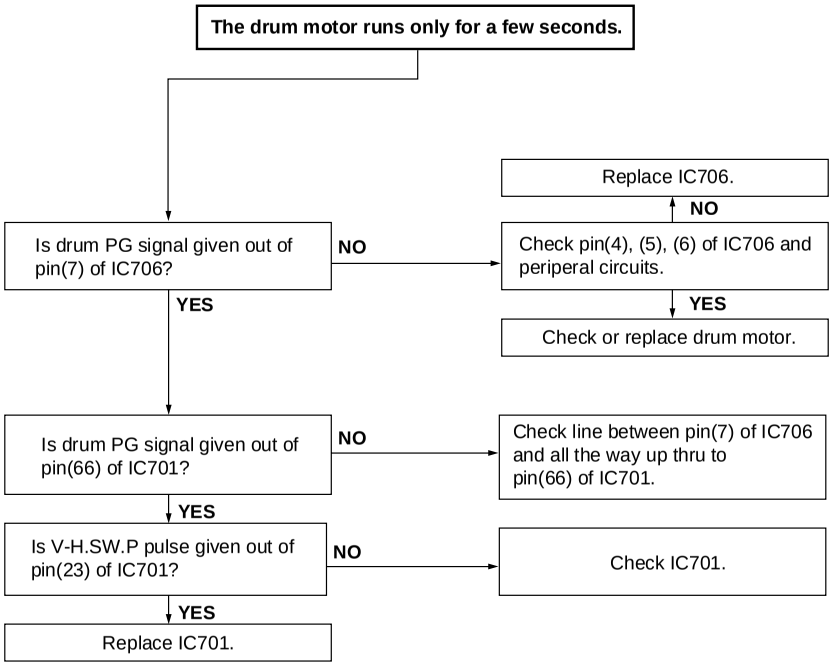
The capstan motor fails to run.

- Is the voltage more than about 2.6V DC given out of pin(29) of IC701.
  - NO → Check IC701.
  - YES ↓
- Is the supply voltage of 5V feed to pin(8) of AC connector?
  - NO → Check PC 5V line.
  - YES ↓
- Is the voltage more than 2.6V DC sent in pin(4) of AC connector?
  - NO → Check between the AC connector and all the way up thru to pin(29) of IC701.
  - YES ↓
- Is the voltage at pin(3) of AC connector 1.6~2.7V?
  - NO → Check between the pin(92) of IC701 and all the way up thru to pin(3) of AC connector.
  - YES ↓
- Is the supply voltage of 12V feed to pin(5) of AC connector?
  - NO → Check AT 12V line and motor voltage selector circuit. (Q955~Q956).
  - YES → Replace capstan motor.

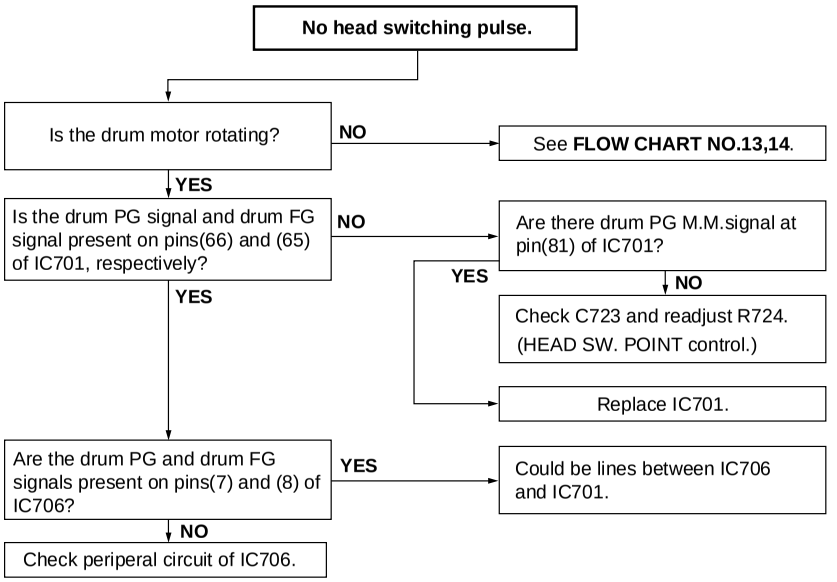
FLOW CHART NO.13


The drum motor fails to run.
Is the voltage more than about 2.6V DC given out of pin(46) of IC701.
NO
Check IC701.
YES
Is the supply voltage of 5V feed to pin(3) of IC706?
NO
Check PC 5V line.
YES
Is the voltage more than about 2.6V applied at pin(2) of IC706?
NO
Check between pin(46) of IC701 and all the way up to pin(2) of IC706.
YES
Is the supply voltage of 12V feed to pin(21) of IC706?
NO
Check AT 12V line.
YES
Check or replace drum motor.

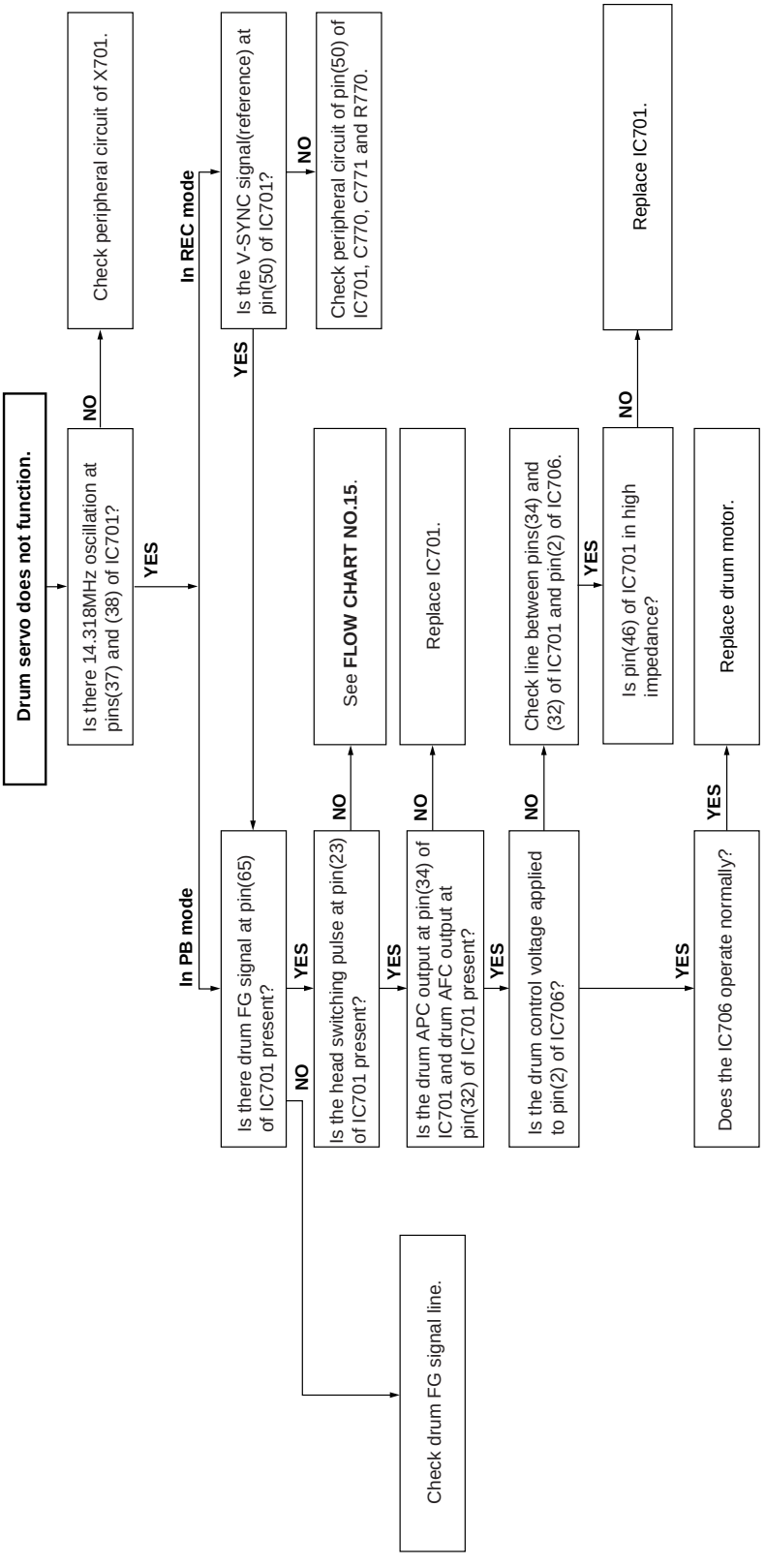
FLOW CHART NO.14

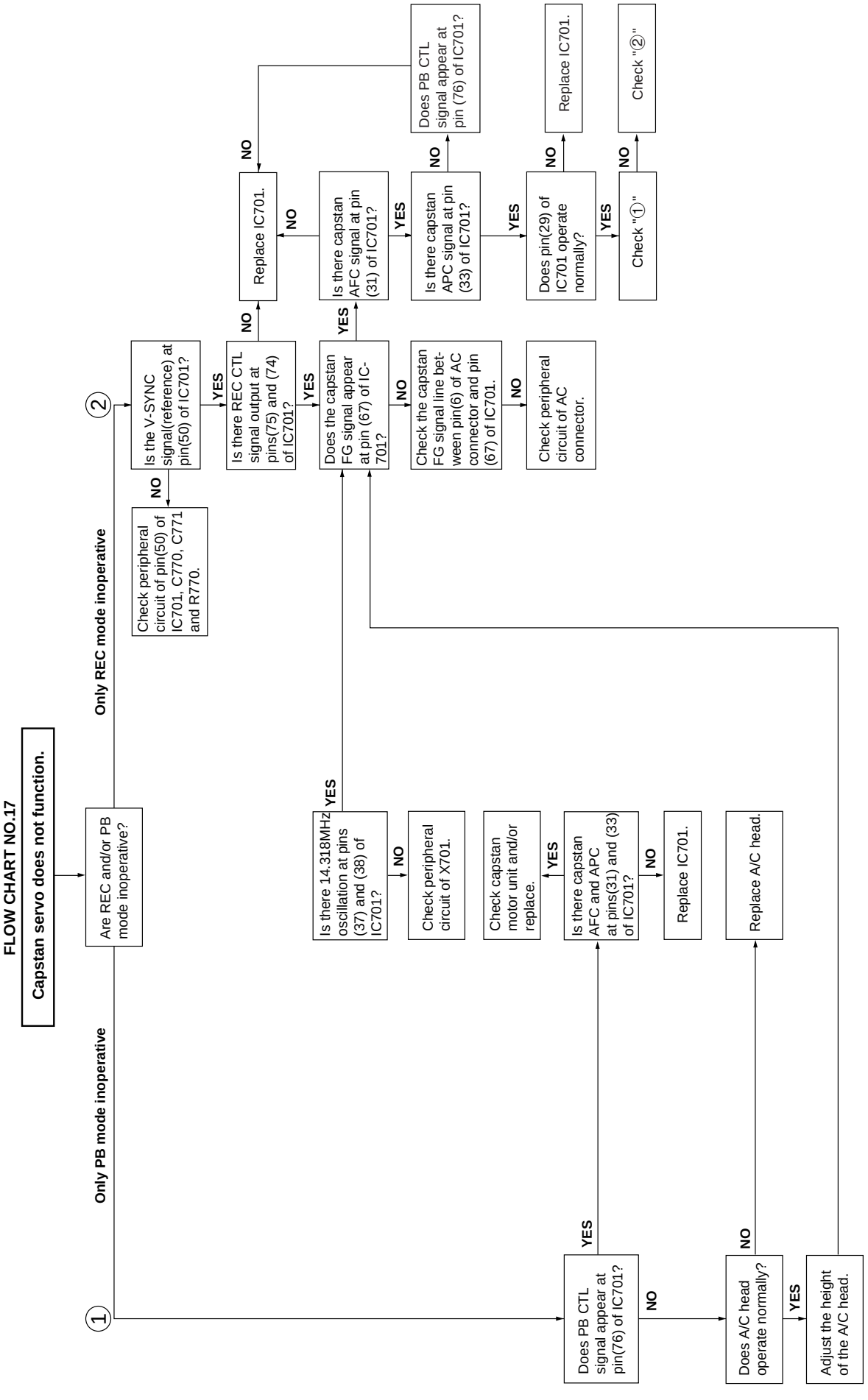

The drum motor runs only for a few seconds.
Replace IC706.
NO
Is drum PG signal given out of pin(7) of IC706?
NO
Check pin(4), (5), (6) of IC706 and periperal circuits.
YES
YES
Check or replace drum motor.
Is drum PG signal given out of pin(66) of IC701?
NO
Check line between pin(7) of IC706 and all the way up thru to pin(66) of IC701.
YES
Is V-H.SW.P pulse given out of pin(23) of IC701?
NO
Check IC701.
YES
Replace IC701.

FLOW CHART NO.15

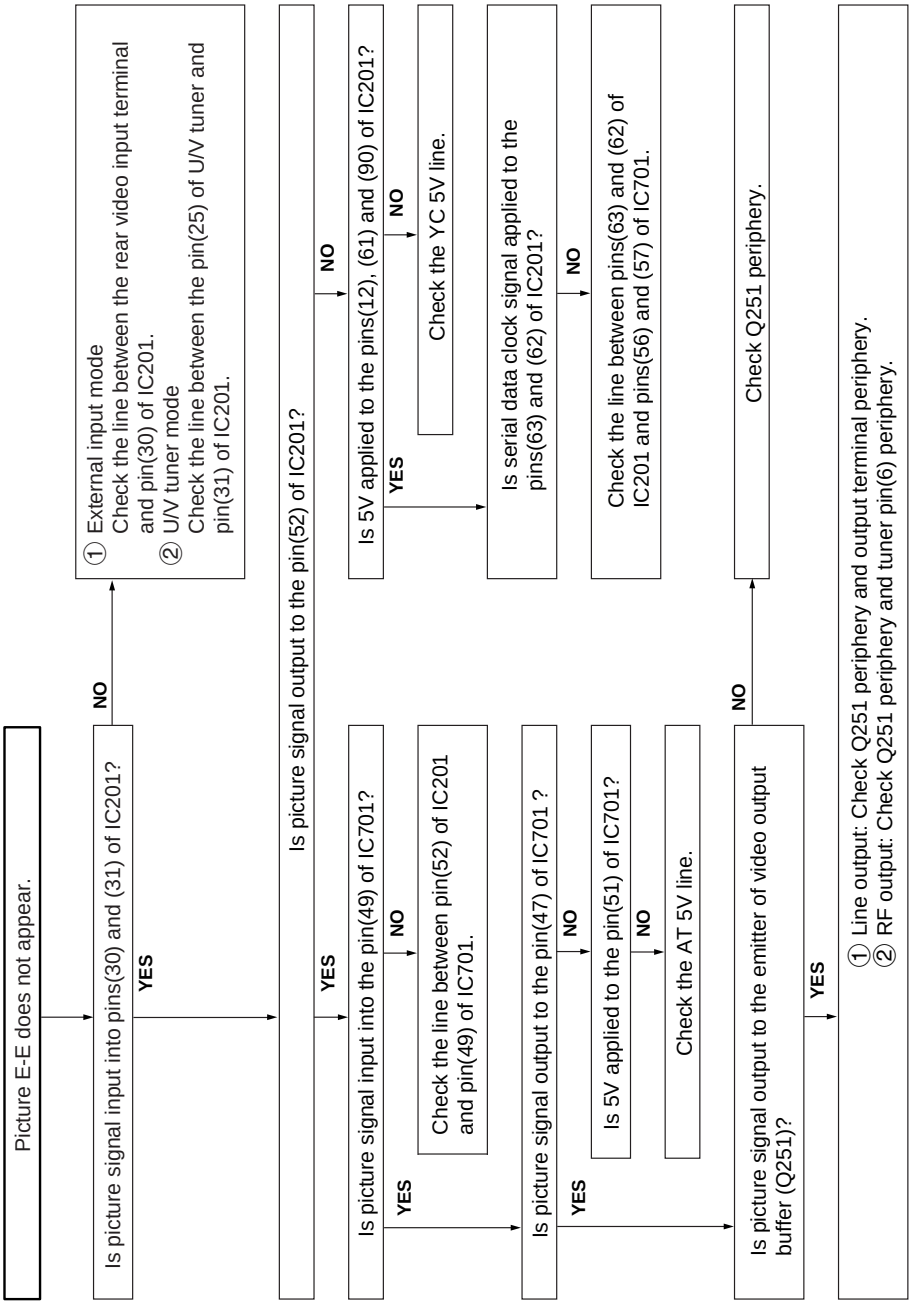

No head switching pulse.
Is the drum motor rotating?
NO
See FLOW CHART NO.13,14.
YES
Is the drum PG signal and drum FG signal present on pins(66) and (65) of IC701, respectively?
NO
Are there drum PG M.M.signal at pin(81) of IC701?
YES
NO
Check C723 and readjust R724. (HEAD SW. POINT control.)
YES
Replace IC701.
Are the drum PG and drum FG signals present on pins(7) and (8) of IC706?
YES
Could be lines between IC706 and IC701.
NO
Check periperal circuit of IC706.

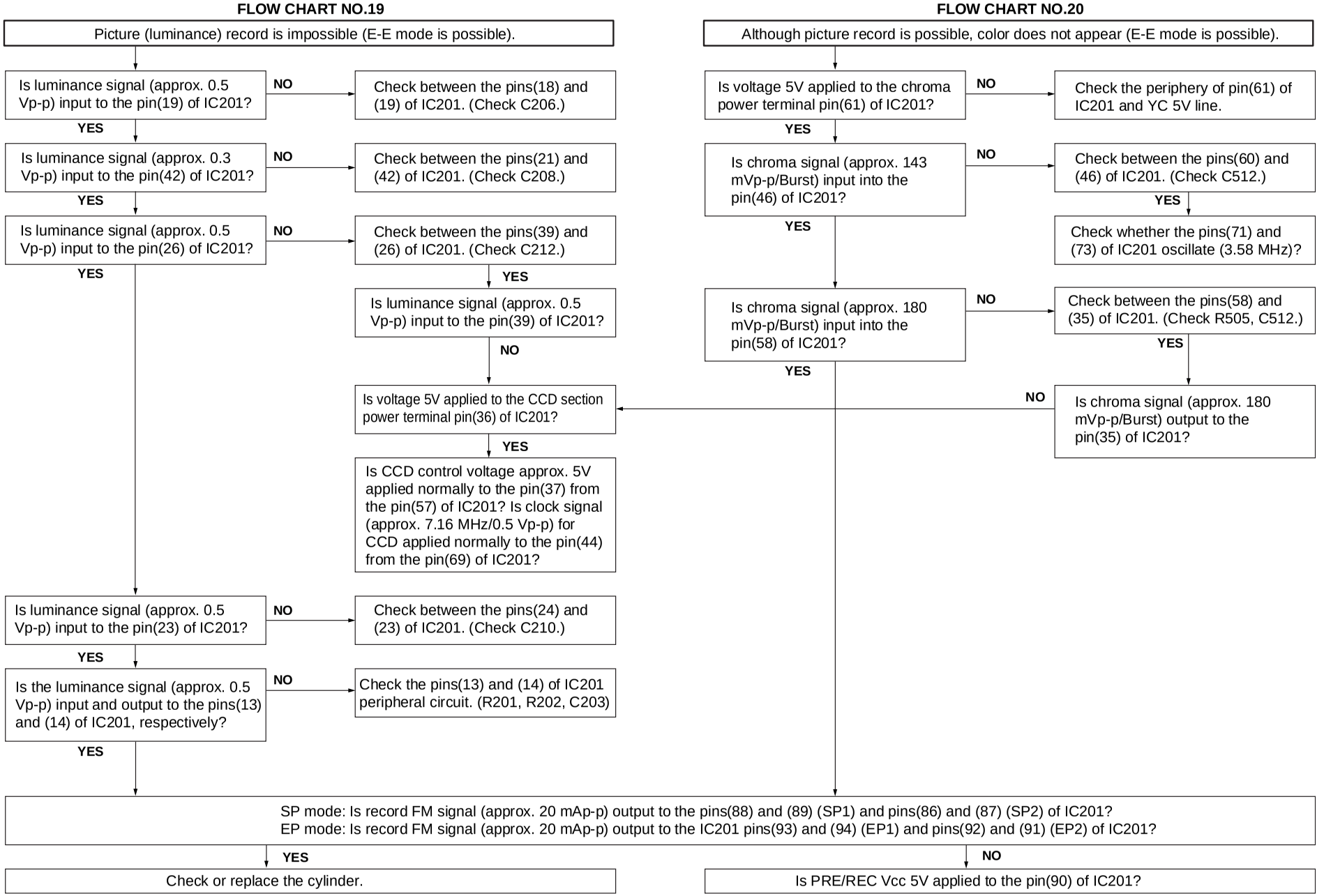
FLOW CHART NO.16


Drum servo does not function.
Is there 14.318MHz oscillation at pins(37) and (38) of IC701?
NO
Check peripheral circuit of X701.
YES
In PB mode
In REC mode
Is there drum FG signal at pin(65) of IC701 present?
YES
NO
Is the V-SYNC signal(reference) at pin(50) of IC701?
YES
NO
Check peripheral circuit of pin(50) of IC701, C770, C771 and R770.
Is the head switching pulse at pin(23) of IC701 present?
YES
NO
See FLOW CHART NO.15.
Is the drum APC output at pin(34) of IC701 and drum AFC output at pin(32) of IC701 present?
YES
NO
Replace IC701.
Is the drum control voltage applied to pin(2) of IC706?
YES
NO
Check line between pins(34) and (32) of IC701 and pin(2) of IC706.
Is pin(46) of IC701 in high impedance?
YES
NO
Replace IC701.
Does the IC706 operate normally?
YES
Replace drum motor.
Check drum FG signal line.

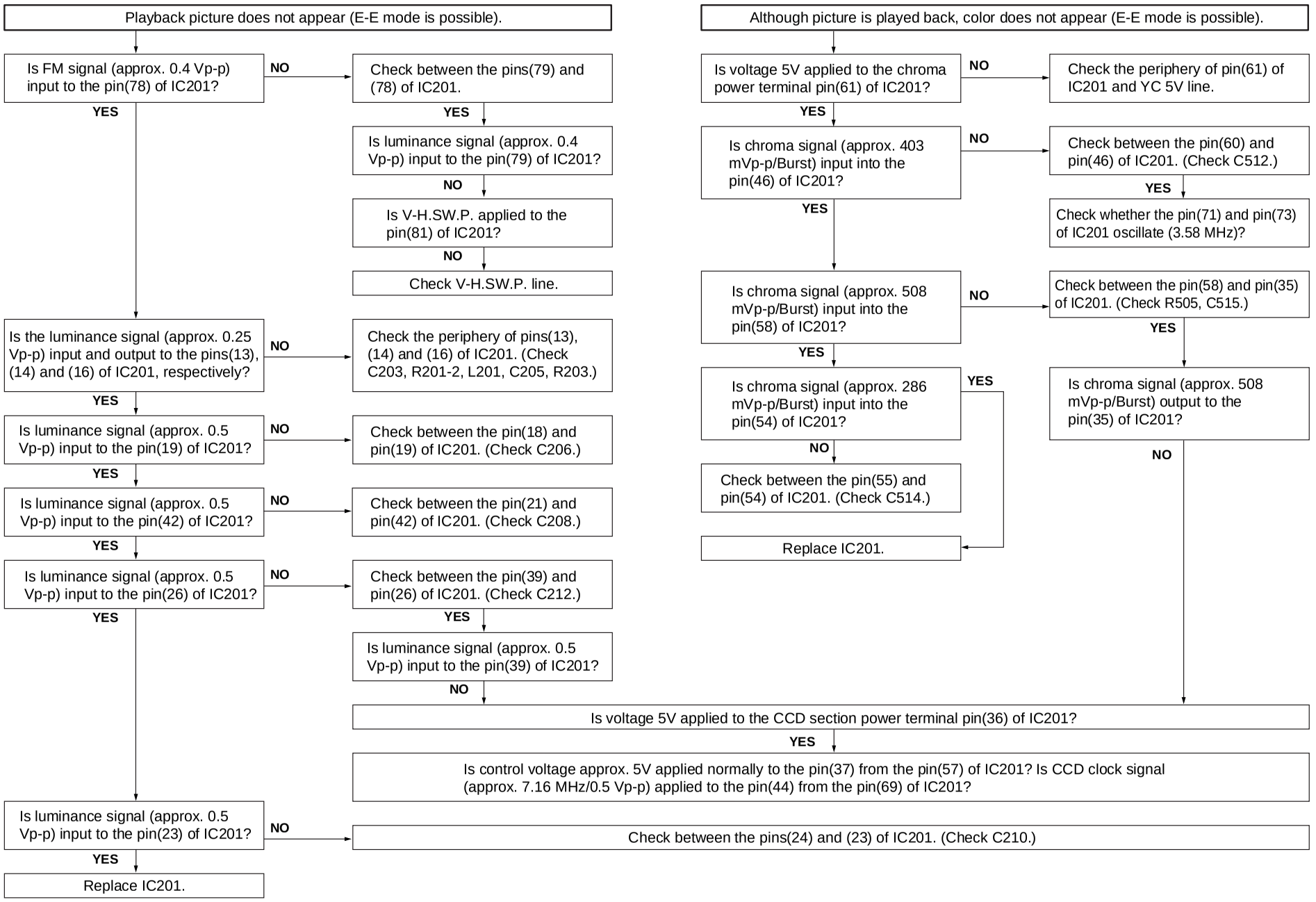

FLOW CHART NO.17
Capstan servo does not function.
Are REC and/or PB mode inoperative?
Only PB mode inoperative
Only REC mode inoperative
①
②
Is the V-SYNC signal(reference) at pin(50) of IC701?
NO
YES
Check peripheral circuit of pin(50) of IC701, C770, C771 and R770.
Is there REC CTL signal output at pins(75) and (74) of IC701?
NO
YES
Replace IC701.
Does the capstan FG signal appear at pin (67) of IC-701?
YES
NO
Is there capstan AFC signal at pin (31) of IC701?
YES
NO
Replace IC701.
Check the capstan FG signal line between pin(6) of AC connector and pin (67) of IC701.
NO
Check peripheral circuit of AC connector.
Is there capstan APC signal at pin (33) of IC701?
YES
NO
Does PB CTL signal appear at pin (76) of IC701?
Does pin(29) of IC701 operate normally?
YES
NO
Replace IC701.
Check "①"
YES
NO
Check "②"
Is there 14.318MHz oscillation at pins (37) and (38) of IC701?
YES
NO
Check peripheral circuit of X701.
Check capstan motor unit and/or replace.
YES
Is there capstan AFC and APC at pins(31) and (33) of IC701?
NO
Replace IC701.
Does PB CTL signal appear at pin(76) of IC701?
YES
NO
Replace A/C head.
Does A/C head operate normally?
NO
YES
Adjust the height of the A/C head.

FLOW CHART NO.18


Picture E-E does not appear.
Is picture signal input into pins(30) and (31) of IC201?
NO
① External input mode
Check the line between the rear video input terminal and pin(30) of IC201.
② U/V tuner mode
Check the line between the pin(25) of U/V tuner and pin(31) of IC201.
YES
Is picture signal output to the pin(52) of IC201?
NO
YES
Is picture signal input into the pin(49) of IC701?
NO
Check the line between pin(52) of IC201 and pin(49) of IC701.
YES
Is 5V applied to the pins(12), (61) and (90) of IC201?
NO
Check the YC 5V line.
YES
Is picture signal output to the pin(47) of IC701 ?
NO
Is 5V applied to the pin(51) of IC701?
NO
Check the AT 5V line.
YES
Is serial data clock signal applied to the pins(63) and (62) of IC201?
NO
Check the line between pins(63) and (62) of IC201 and pins(56) and (57) of IC701.
Is picture signal output to the emitter of video output buffer (Q251)?
NO
Check Q251 periphery.
YES
① Line output: Check Q251 periphery and output terminal periphery.
② RF output: Check Q251 periphery and tuner pin(6) periphery.


FLOW CHART NO.19
Picture (luminance) record is impossible (E-E mode is possible).
Is luminance signal (approx. 0.5 Vp-p) input to the pin(19) of IC201?
NO
Check between the pins(18) and (19) of IC201. (Check C206.)
YES
Is luminance signal (approx. 0.3 Vp-p) input to the pin(42) of IC201?
NO
Check between the pins(21) and (42) of IC201. (Check C208.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(26) of IC201?
NO
Check between the pins(39) and (26) of IC201. (Check C212.)
YES
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(39) of IC201?
NO
Is voltage 5V applied to the CCD section power terminal pin(36) of IC201?
YES
Is CCD control voltage approx. 5V applied normally to the pin(37) from the pin(57) of IC201? Is clock signal (approx. 7.16 MHz/0.5 Vp-p) for CCD applied normally to the pin(44) from the pin(69) of IC201?
Is luminance signal (approx. 0.5 Vp-p) input to the pin(23) of IC201?
NO
Check between the pins(24) and (23) of IC201. (Check C210.)
YES
Is the luminance signal (approx. 0.5 Vp-p) input and output to the pins(13) and (14) of IC201, respectively?
NO
Check the pins(13) and (14) of IC201 peripheral circuit. (R201, R202, C203)
YES
FLOW CHART NO.20
Although picture record is possible, color does not appear (E-E mode is possible).
Is voltage 5V applied to the chroma power terminal pin(61) of IC201?
NO
Check the periphery of pin(61) of IC201 and YC 5V line.
YES
Is chroma signal (approx. 143 mVp-p/Burst) input into the pin(46) of IC201?
NO
Check between the pins(60) and (46) of IC201. (Check C512.)
YES
YES
Check whether the pins(71) and (73) of IC201 oscillate (3.58 MHz)?
Is chroma signal (approx. 180 mVp-p/Burst) input into the pin(58) of IC201?
NO
Check between the pins(58) and (35) of IC201. (Check R505, C512.)
YES
YES
NO
Is chroma signal (approx. 180 mVp-p/Burst) output to the pin(35) of IC201?
SP mode: Is record FM signal (approx. 20 mAp-p) output to the pins(88) and (89) (SP1) and pins(86) and (87) (SP2) of IC201?
EP mode: Is record FM signal (approx. 20 mAp-p) output to the IC201 pins(93) and (94) (EP1) and pins(92) and (91) (EP2) of IC201?
YES
NO
Check or replace the cylinder.
Is PRE/REC Vcc 5V applied to the pin(90) of IC201?

FLOW CHART NO.21


Playback picture does not appear (E-E mode is possible).
Is FM signal (approx. 0.4 Vp-p) input to the pin(78) of IC201?
NO
Check between the pins(79) and (78) of IC201.
YES
Is luminance signal (approx. 0.4 Vp-p) input to the pin(79) of IC201?
NO
Is V-H.SW.P. applied to the pin(81) of IC201?
NO
Check V-H.SW.P. line.
YES
Is the luminance signal (approx. 0.25 Vp-p) input and output to the pins(13), (14) and (16) of IC201, respectively?
NO
Check the periphery of pins(13), (14) and (16) of IC201. (Check C203, R201-2, L201, C205, R203.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(19) of IC201?
NO
Check between the pin(18) and pin(19) of IC201. (Check C206.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(42) of IC201?
NO
Check between the pin(21) and pin(42) of IC201. (Check C208.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(26) of IC201?
NO
Check between the pin(39) and pin(26) of IC201. (Check C212.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(39) of IC201?
NO
Is voltage 5V applied to the CCD section power terminal pin(36) of IC201?
YES
Is control voltage approx. 5V applied normally to the pin(37) from the pin(57) of IC201? Is CCD clock signal (approx. 7.16 MHz/0.5 Vp-p) applied to the pin(44) from the pin(69) of IC201?
Is luminance signal (approx. 0.5 Vp-p) input to the pin(23) of IC201?
NO
Check between the pins(24) and (23) of IC201. (Check C210.)
YES
Replace IC201.

FLOW CHART NO.22

Although picture is played back, color does not appear (E-E mode is possible).
Is voltage 5V applied to the chroma power terminal pin(61) of IC201?
NO
Check the periphery of pin(61) of IC201 and YC 5V line.
YES
Is chroma signal (approx. 403 mVp-p/Burst) input into the pin(46) of IC201?
NO
Check between the pin(60) and pin(46) of IC201. (Check C512.)
YES
Check whether the pin(71) and pin(73) of IC201 oscillate (3.58 MHz)?
Is chroma signal (approx. 508 mVp-p/Burst) input into the pin(58) of IC201?
NO
Check between the pin(58) and pin(35) of IC201. (Check R505, C515.)
YES
Is chroma signal (approx. 286 mVp-p/Burst) input into the pin(54) of IC201?
YES
Is chroma signal (approx. 508 mVp-p/Burst) output to the pin(35) of IC201?
NO
Check between the pin(55) and pin(54) of IC201. (Check C514.)
Replace IC201.

FLOW CHART NO.23

No Hi-Fi E-E sound heard.

Is there signal inputted at each terminal of IC651 as shown in table?

	L-ch	R-ch	
Front input terminal	pin(15)	pin(10)	NO → Check the peripheral circuit of front input terminal.
Rear input terminal	pin(14)	pin(9)	NO → Check the peripheral circuit of rear input terminal.
Tuner audio terminal	pin(48) (TP1401~1402)		NO → Is there SIF signal from pin(24) of Tuner?

YES

Is the voltage 5V applied to pin(40) of IC6501, 9V applied to pin(58).
NO → Check the regulator circuit of Hi-Fi 5V and PC 9V.

YES

Are serial data and clock signal at pins(43), (42) of IC651?
NO → Check line between pins(43), (42) of IC651 and pins(17), (18) of IC701.

YES

Is "L" level applied at pin(36) of IC651?
NO → Check line between pin(30) of IC651 and pin(21) of IC701.

YES

Is "H" level applied at pin(28) of IC651?
NO → Is Sub carrier signal (3.58MHz, about 900m Vp-p) input to pin(45) of IC651?
NO → Check line between emitter of Q501 and pin(28) of IC651.

YES

Line output terminal : Is there audio signal outputted at pins(53) and (57) of IC651?
RF output terminal : Is there audio signal outputted at pin(59) of IC651?

YES
NO → Replace IC651.

Line output terminal : Check line ranging from pins(53) and (57) of IC651 to the audio output terminal.
RF output terminal : Check line ranging from pin(59) of IC651 to pin(2) of tuner (TU101).

FLOW CHART NO.24

Hi-Fi sound cannot be recorded (E-E mode is normal).

Is terminal voltage (REC AGC. ADJ.) pin(37) of IC651 normal?
NO → Is the pin(29) of IC651 about 3.7V?
YES → Replace IC651.
NO → Check Hi-Fi REC CTL line.

YES

Is record FM signal output to the pins(21) to (24) (ch-1)/pins(21) and (22) (ch-2) of IC651?
NO → Is voltage 5V applied to pin(25) of IC651.
YES → Check line of Hi-Fi 5V.
NO → Check the AH-MZ connector.

FLOW CHART NO.25

Hi-Fi sound cannot be played back (E-E mode is normal).

Is playback envelope signal output to the pins(29) and (30) of IC651? (300 mVp-p)
NO → Is A-H.SW.P input into the pin(27) of IC651?
YES → Replace IC651.
NO → Check the A-H.SW.P. line from the pin(27) of IC651 to the pin(26) of IC701.

FLOW CHART NO.26

Recording in linear audio is impossible (Hi-Fi E-E mode is normal).

Is audio signal input into the IC201 pin(8)?
NO → Check the line between the pin(61) of IC651 to the pin(8) of IC201.

YES

Is the pin(99) of IC201 in "L" level?
NO → Check the periphery of pin(99) of IC201. (R617)

YES

Does the bias oscillation circuit operate normally?
NO → Check the bias oscillation circuit (T601, Q602, Q603).

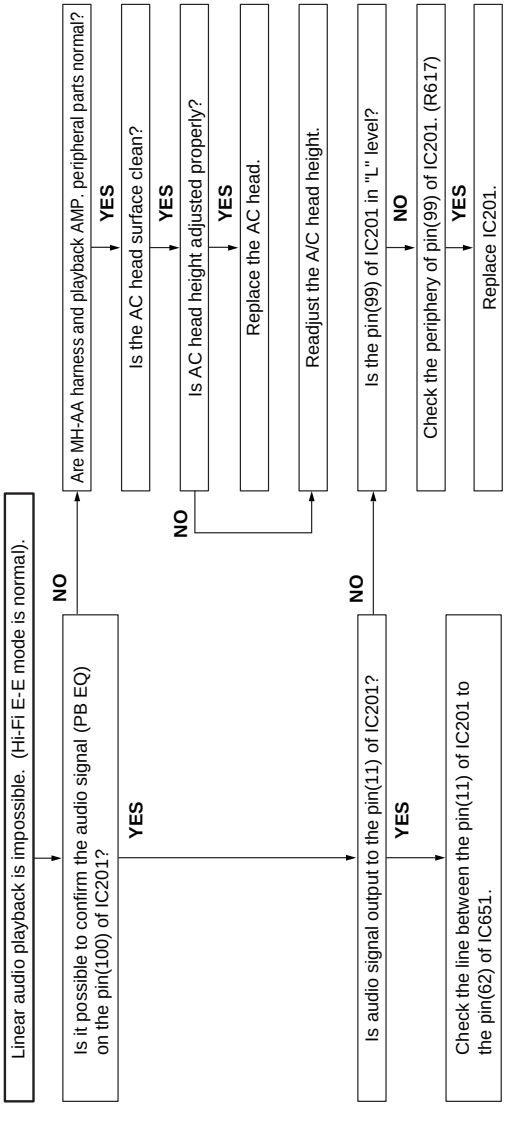
YES

Is audio signal on which bias signal is superposed output to the pin(4) of IC201?

YES

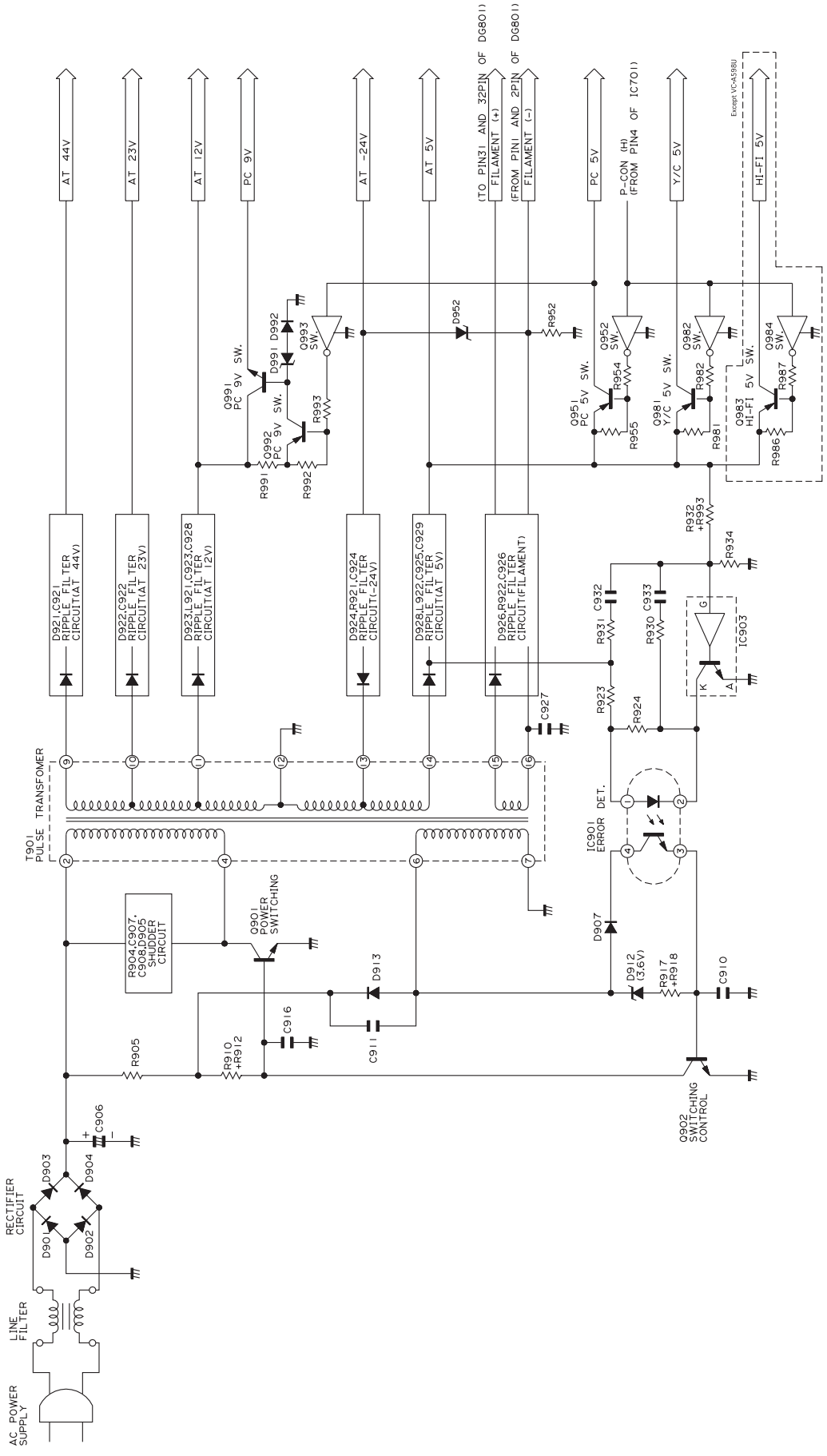
Check the AA-MH harness and A/C head.

FLOW CHART NO.27

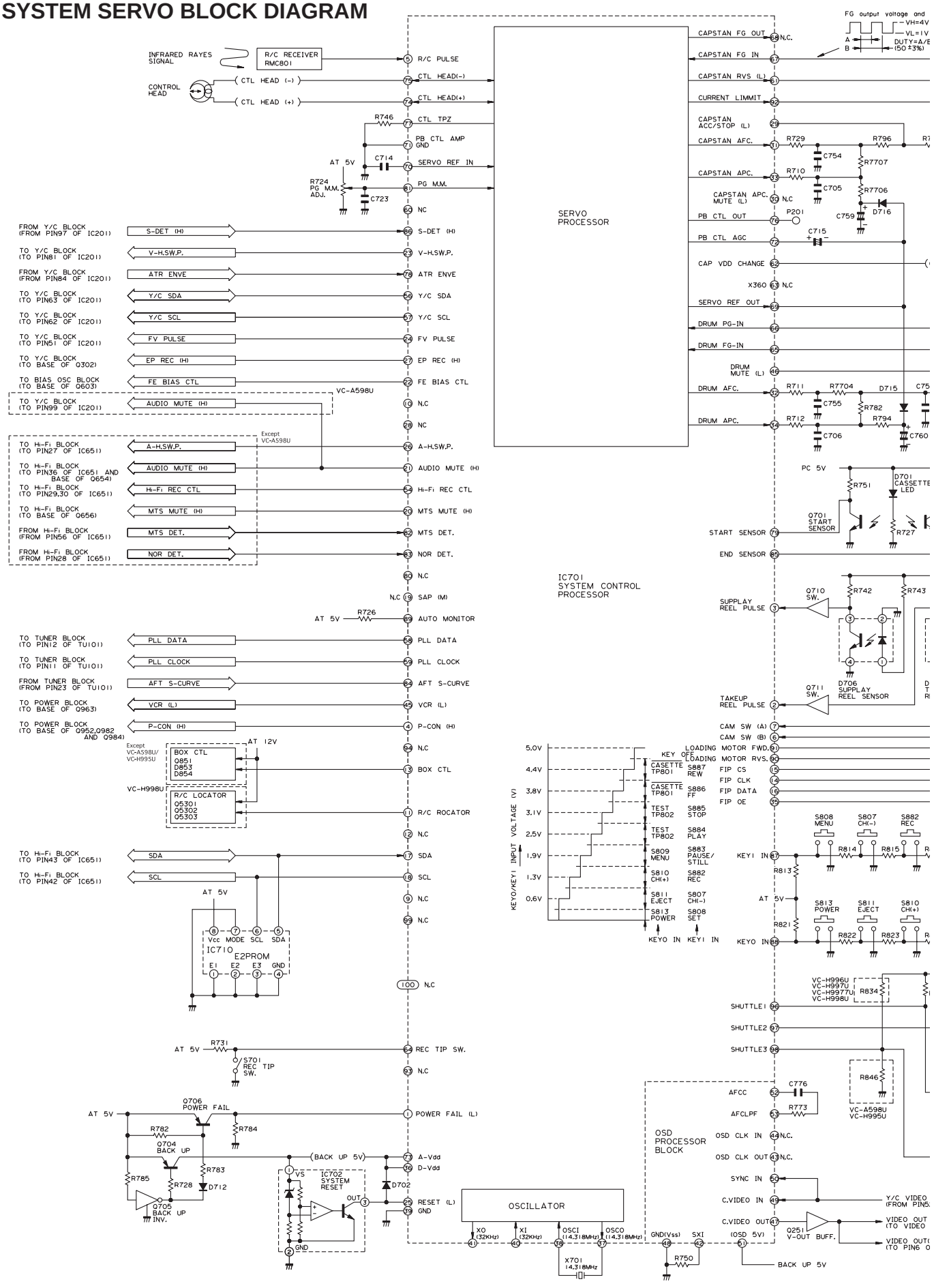

Linear audio playback is impossible. (Hi-Fi E-E mode is normal).
Is it possible to confirm the audio signal (PB EQ) on the pin(100) of IC201?
NO
YES
Are MH-AA harness and playback AMP. peripheral parts normal?
YES
Is the AC head surface clean?
YES
Is AC head height adjusted properly?
NO
YES
Replace the AC head.
Readjust the A/C head height.
Is audio signal output to the pin(11) of IC201?
NO
YES
Is the pin(99) of IC201 in "L" level?
NO
Check the periphery of pin(99) of IC201. (R617)
YES
Replace IC201.
Check the line between the pin(11) of IC201 to the pin(62) of IC651.

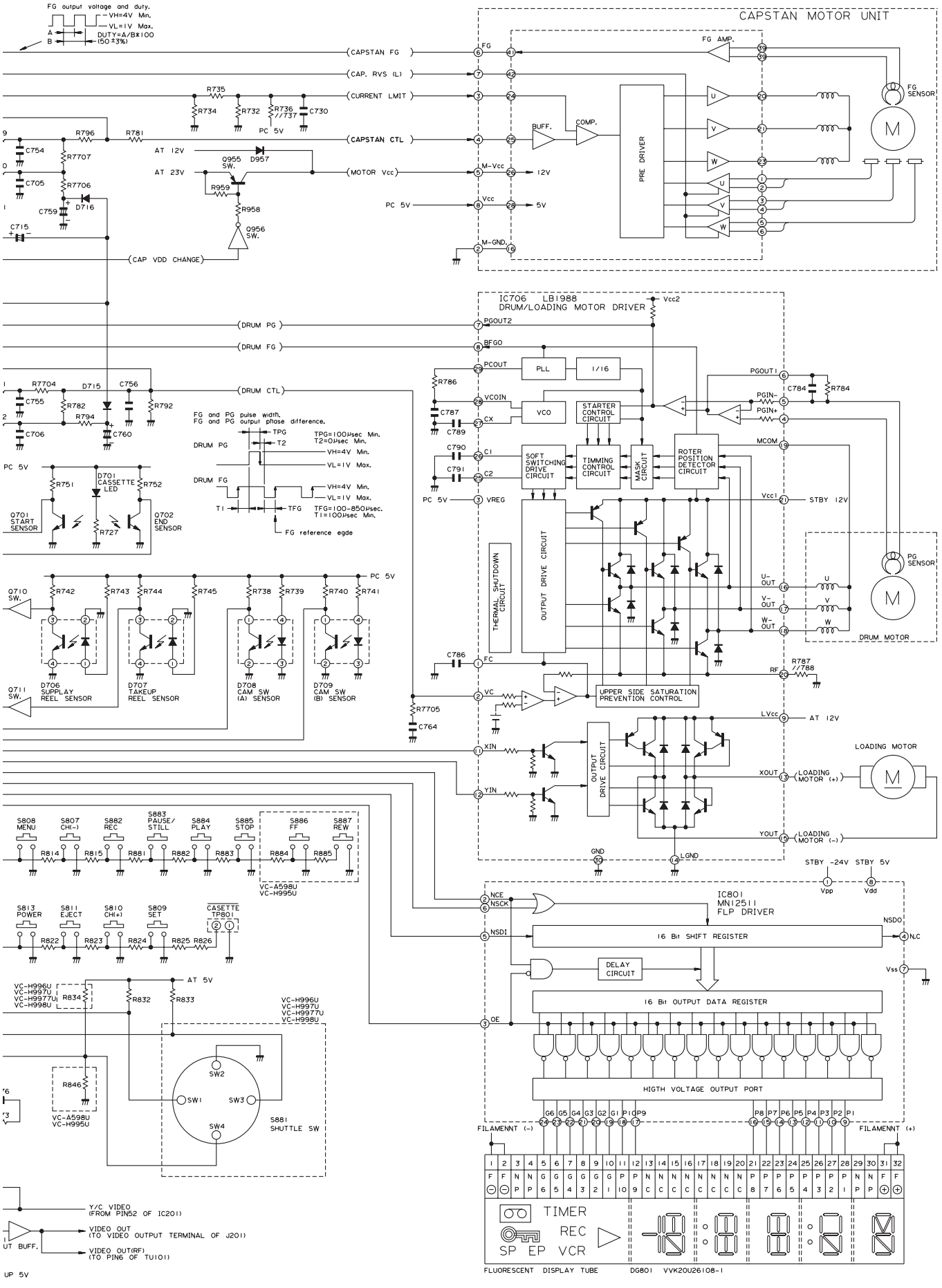
8. BLOCK DIAGRAM

POWER CIRCUIT BLOCK DIAGRAM

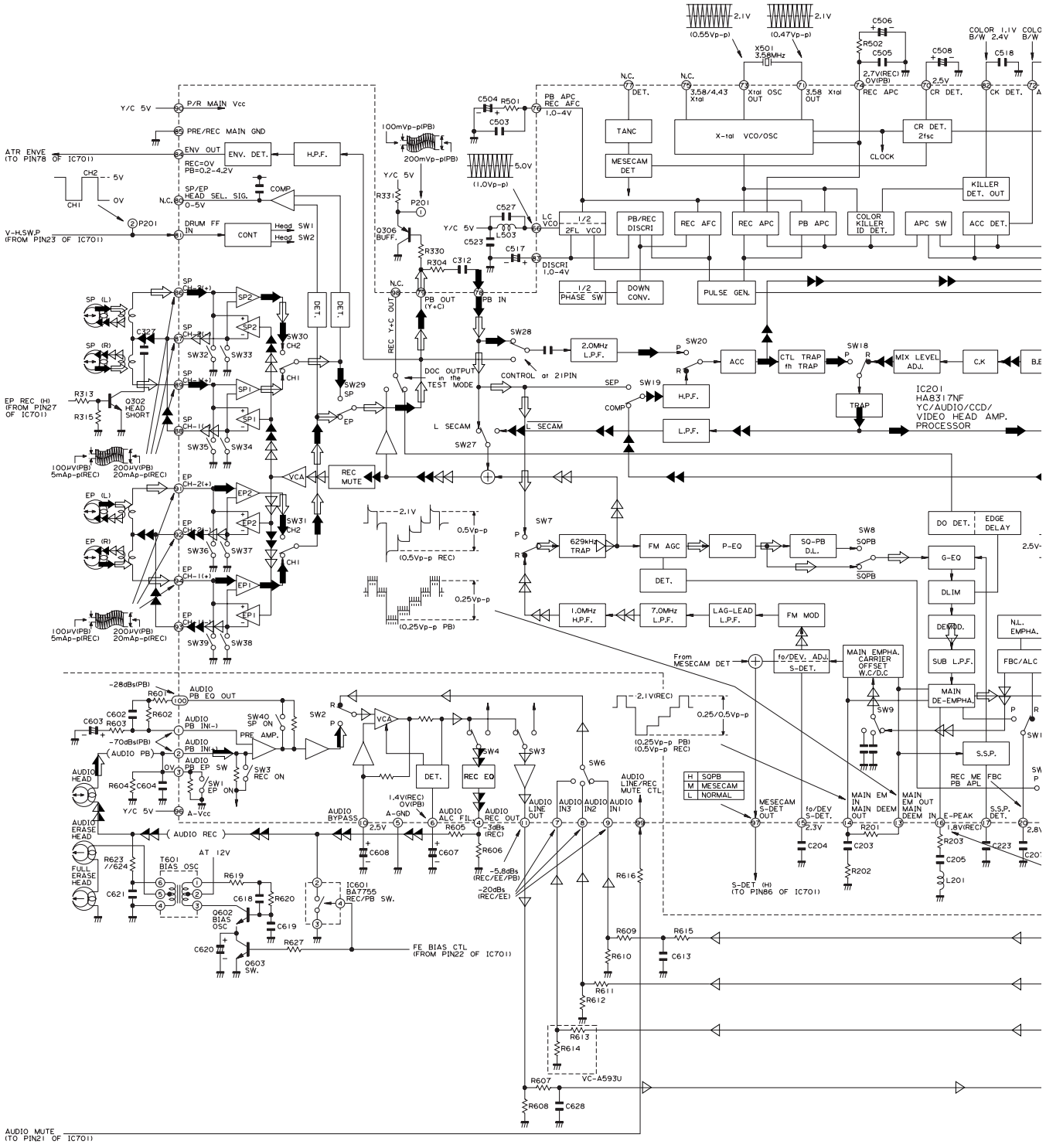


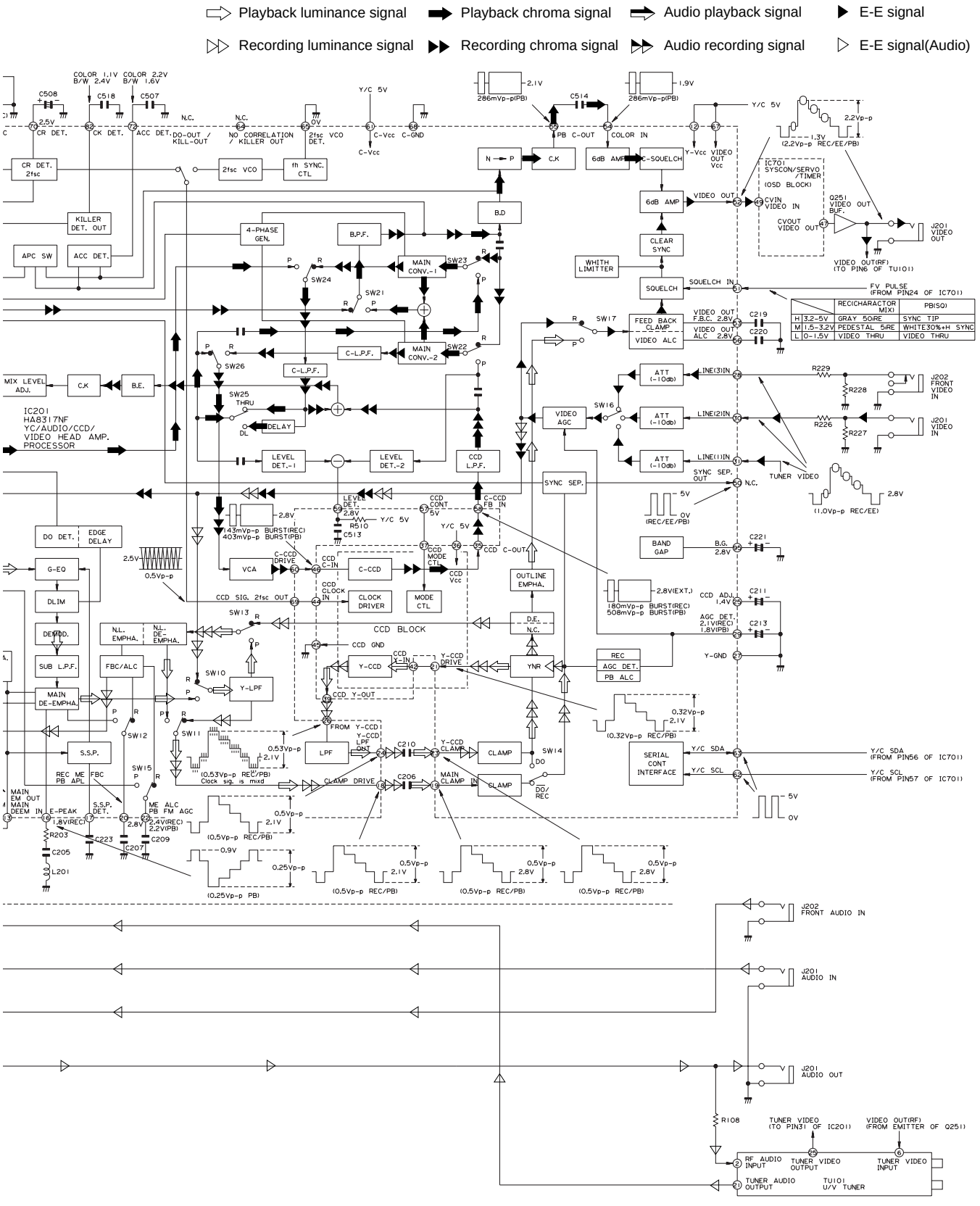
SYSTEM SERVO BLOCK DIAGRAM



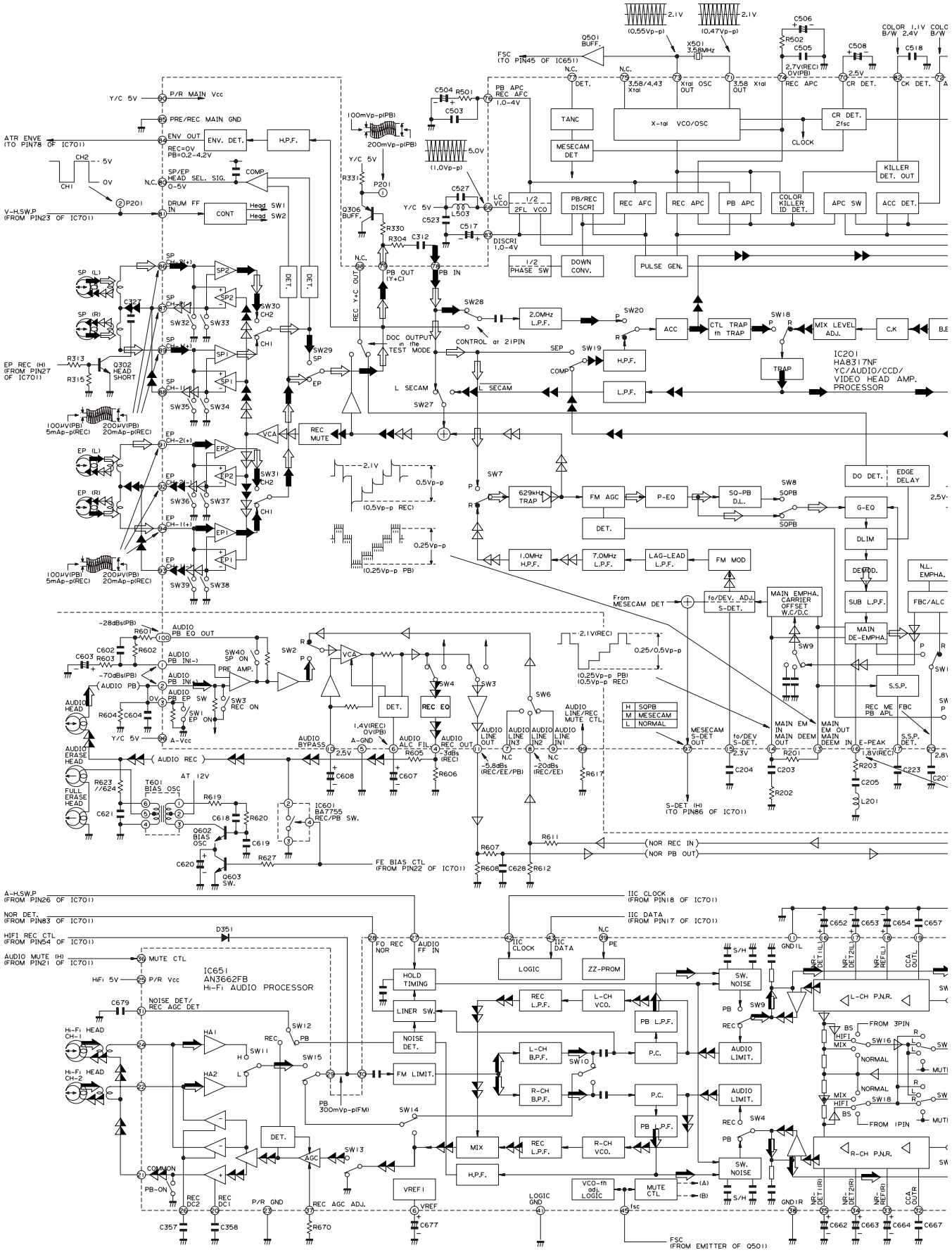

CAPSTAN MOTOR UNIT
FG output voltage and duty.
VH=4V Min.
VL=1V Max.
DUTY=A/B×100 (50±3%)
(CAPSTAN FG)
(CAP. RVS (L))
(CURRENT LMIT)
(CAPSTAN CTL)
(MOTOR Vcc)
(CAP VDD CHANGE)
FG AMP.
FG SENSOR
BUFF.
COMP.
PRE DRIVER
IC706 LB1988
DRUM/LOADING MOTOR DRIVER
(DRUM PG)
(DRUM FG)
(DRUM CTL)
PLL
1/16
VCO
STARTER CONTROL CIRCUIT
SOFT SWITCHING DRIVE CIRCUIT
TIMMING CONTROL CIRCUIT
MASK CIRCUIT
ROTER POSITION DETECTOR CIRCUIT
THERMAL SHUTDOWN CIRCUIT
OUTPUT DRIVE CIRCUIT
UPPER SIDE SATURATION PREVENTION CONTROL
STBY 12V
AT 12V
PG SENSOR
DRUM MOTOR
LOADING MOTOR
FG and PG pulse width.
FG and PG output phase difference.
TPG=100μsec Min.
T2=0μsec Min.
TFG=100-850μsec.
T1=100μsec Min.
FG reference egde
D701 CASSETTE LED
D702 END SENSOR
D706 SUPPLAY REEL SENSOR
D707 TAKEUP REEL SENSOR
D708 CAM SW (A) SENSOR
D709 CAM SW (B) SENSOR
IC801
MN12511
FLP DRIVER
16 Bit SHIFT REGISTER
DELAY CIRCUIT
16 Bit OUTPUT DATA REGISTER
HIGTH VOLTAGE OUTPUT PORT
FILAMENNT (-)
FILAMENNT (+)
TIMER
REC
SP EP VCR
FLUORESCENT DISPLAY TUBE
DG801 VVK20U26108-1
S881 SHUTTLE SW
VC-A598U
VC-H995U
VC-H996U
VC-H997U
VC-H9977U
VC-H998U
Y/C VIDEO
(FROM PIN52 OF IC201)
VIDEO OUT
(TO VIDEO OUTPUT TERMINAL OF J201)
VIDEO OUT(RF)
(TO PIN6 OF TU101)

SIGNAL FLOW BLOCK DIAGRAM (VC-A598U)



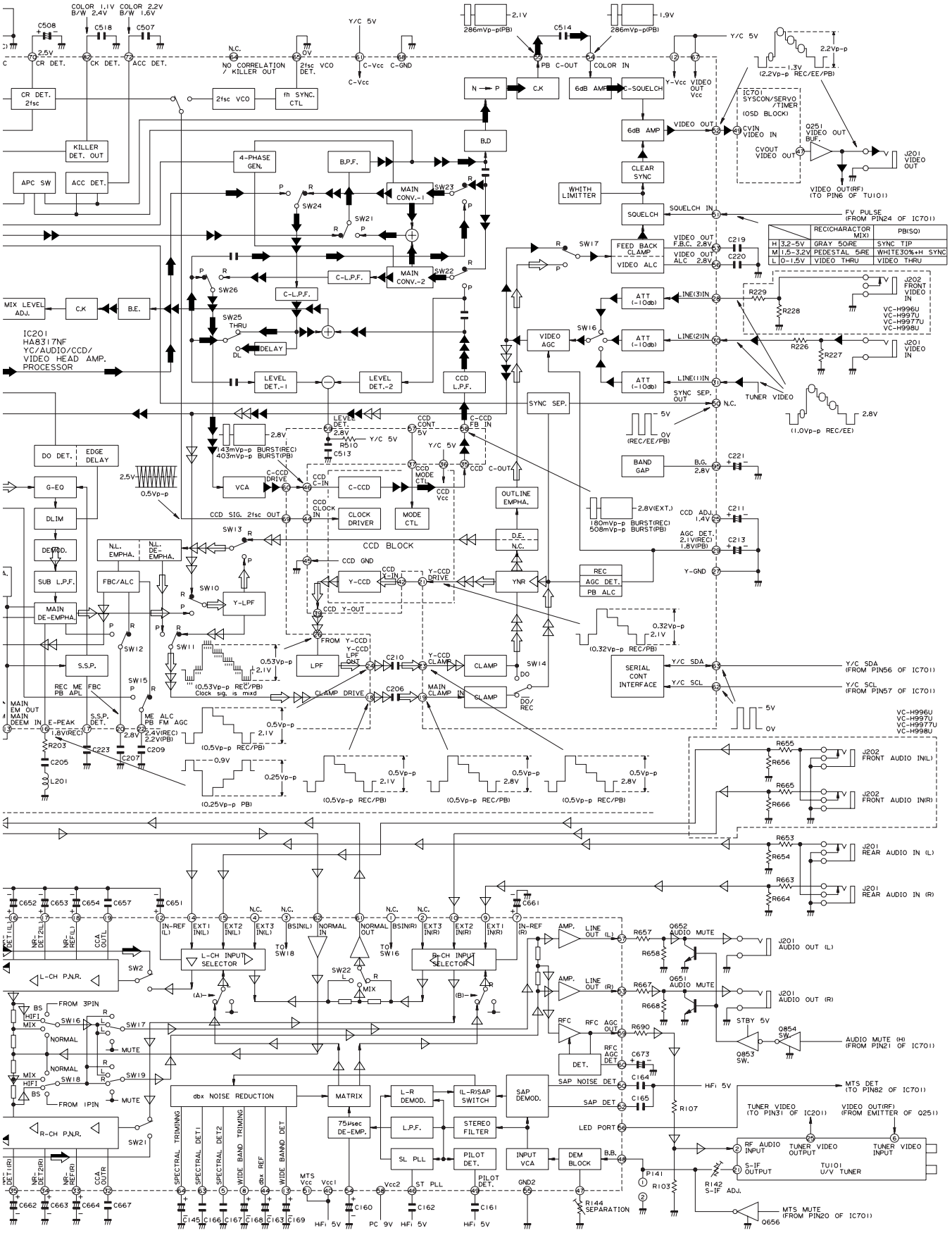

Playback luminance signal
Playback chroma signal
Audio playback signal
E-E signal
Recording luminance signal
Recording chroma signal
Audio recording signal
E-E signal(Audio)
IC201
HA83I7NF
YC/AUDIO/CCD/
VIDEO HEAD AMP.
PROCESSOR
CCD BLOCK
IC701
SYSCON/SERVO
/TIMER
(OSD BLOCK)
TU101
U/V TUNER
J201
VIDEO OUT
J202
FRONT VIDEO IN
J201
VIDEO IN
J202
FRONT AUDIO IN
J201
AUDIO IN
J201
AUDIO OUT
SERIAL
CONT
INTERFACE
Y/C SDA
Y/C SCL
TUNER VIDEO
VIDEO OUT(RF)
RF AUDIO INPUT
TUNER VIDEO OUTPUT
TUNER VIDEO INPUT
TUNER AUDIO OUTPUT

SIGNAL FLOW BLOCK DIAGRAM (VC-H995U/H996U/H997U/H9977U/H998U)



Playback luminance signal | Playback chroma signal | Audio playback signal | E-E signal

Recording luminance signal | Recording chroma signal | Audio recording signal | E-E signal(Audio)



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH " ⚠ " (▭) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET.
BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

AVIS DE SECURITE IMPORTANT:

LES PIECES MARQUEES " ⚠ " (▭) SONT IMPORTANTES POUR MAINTENIR LA SECURITE DE L'APPAREIL.
NE REMPLACER CES PIECES QUE PAR DES PIECES DONT LE NUMERO EST SPECIFIE POUR MAINTENIR LA SECURITE ET PROTEGER LE BON FONCTIONNEMENT DE L'APPAREIL.

- *The indicated voltages in the following diagram are measured with an SSVM, upon receiving color bars (400 Hz sound signal) in either the record mode or the play mode voltage is indicated as follows.*

4.0	*. . . . Record mode (SP)*
(4.0)	*. . . . PB mode (SP)*
4.0	*. . . . LP mode*
4.0	*. . . . EP mode*

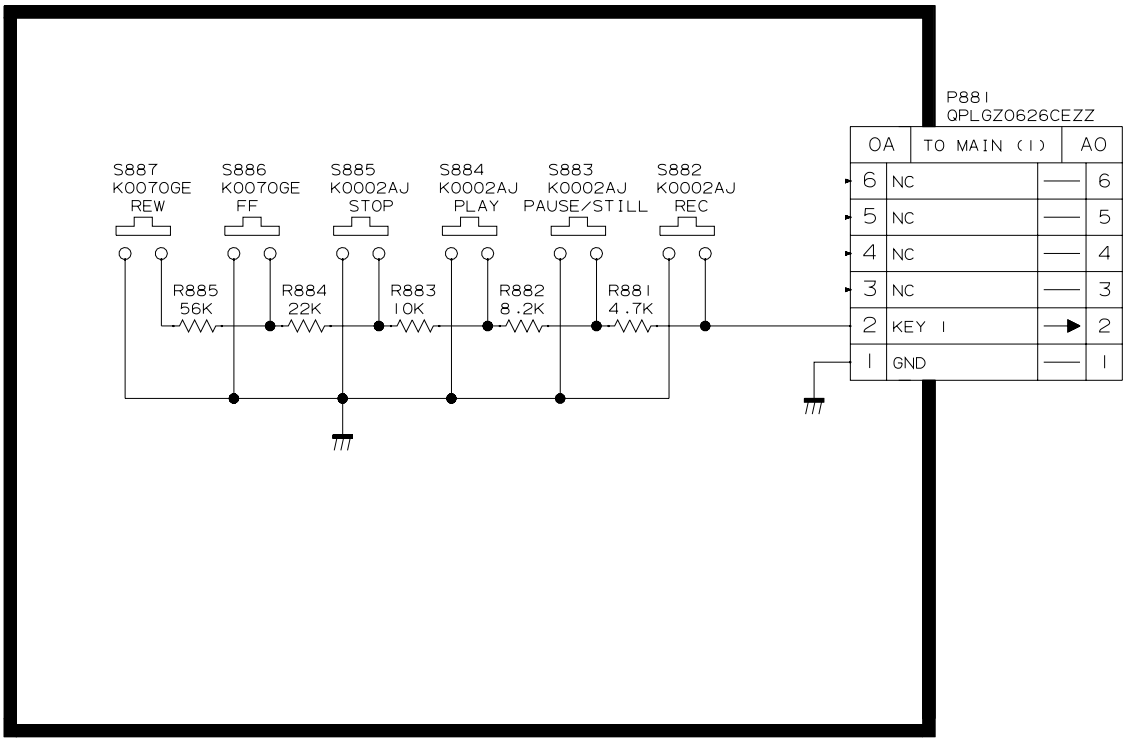
NOTE:
1. *The unit of resistance "ohm" is omitted (K: 1000 ohms M: 1 Meg ohm).*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *All capacitors μF, unless otherwise noted P: μμF.*

Voltages and waveform are measured as follows:
- *DC voltages are measured with an SSVM placed between points indicated and chassis ground, with the supply voltage of 120V AC and all controls for normal positions.*

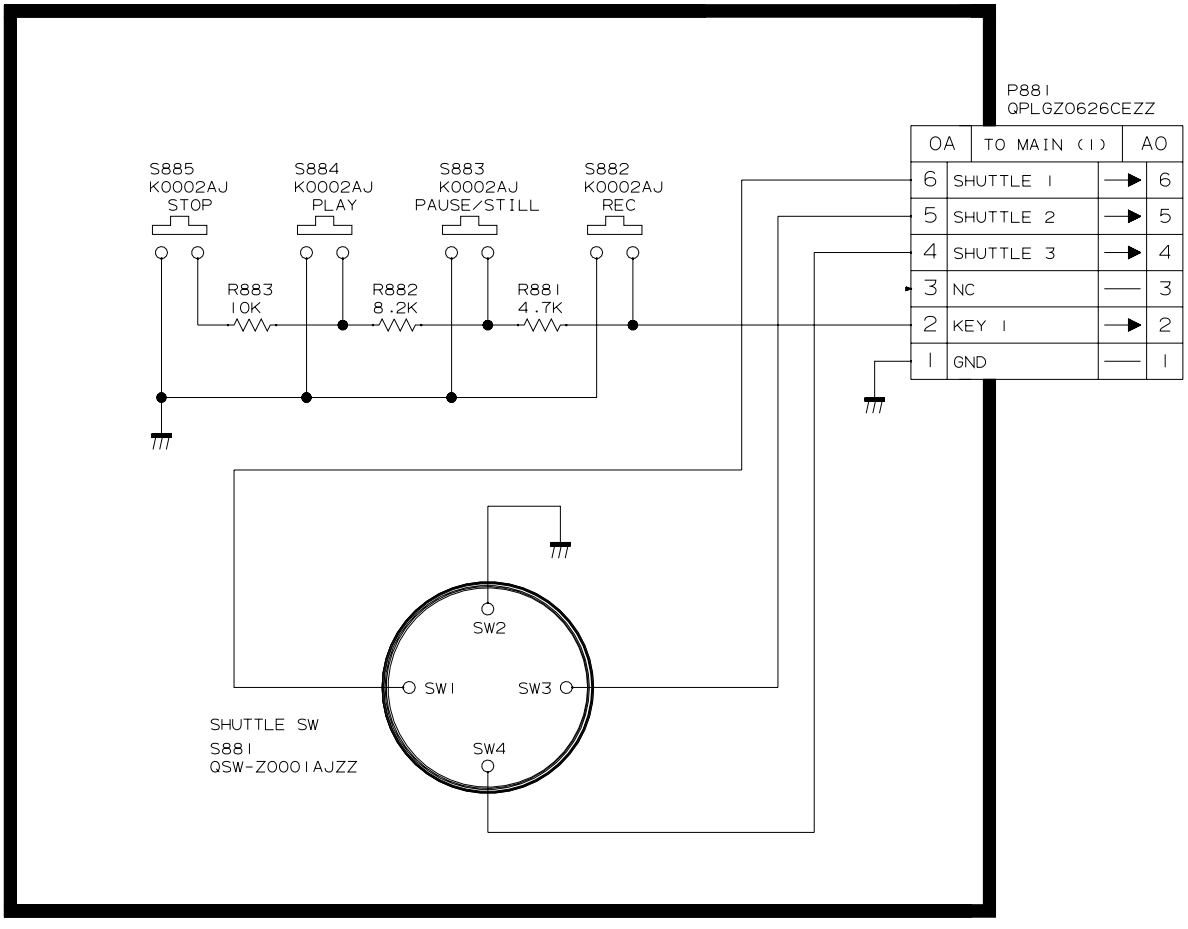
This circuit diagram is a standard one, actual circuits printed may be subject to change for product improvement without prior notice.

9. SCHEMATIC DIAGRAM AND PWB FOIL PATTERN

OPERATION CIRCUIT (VC-A598U/VC-H995U)

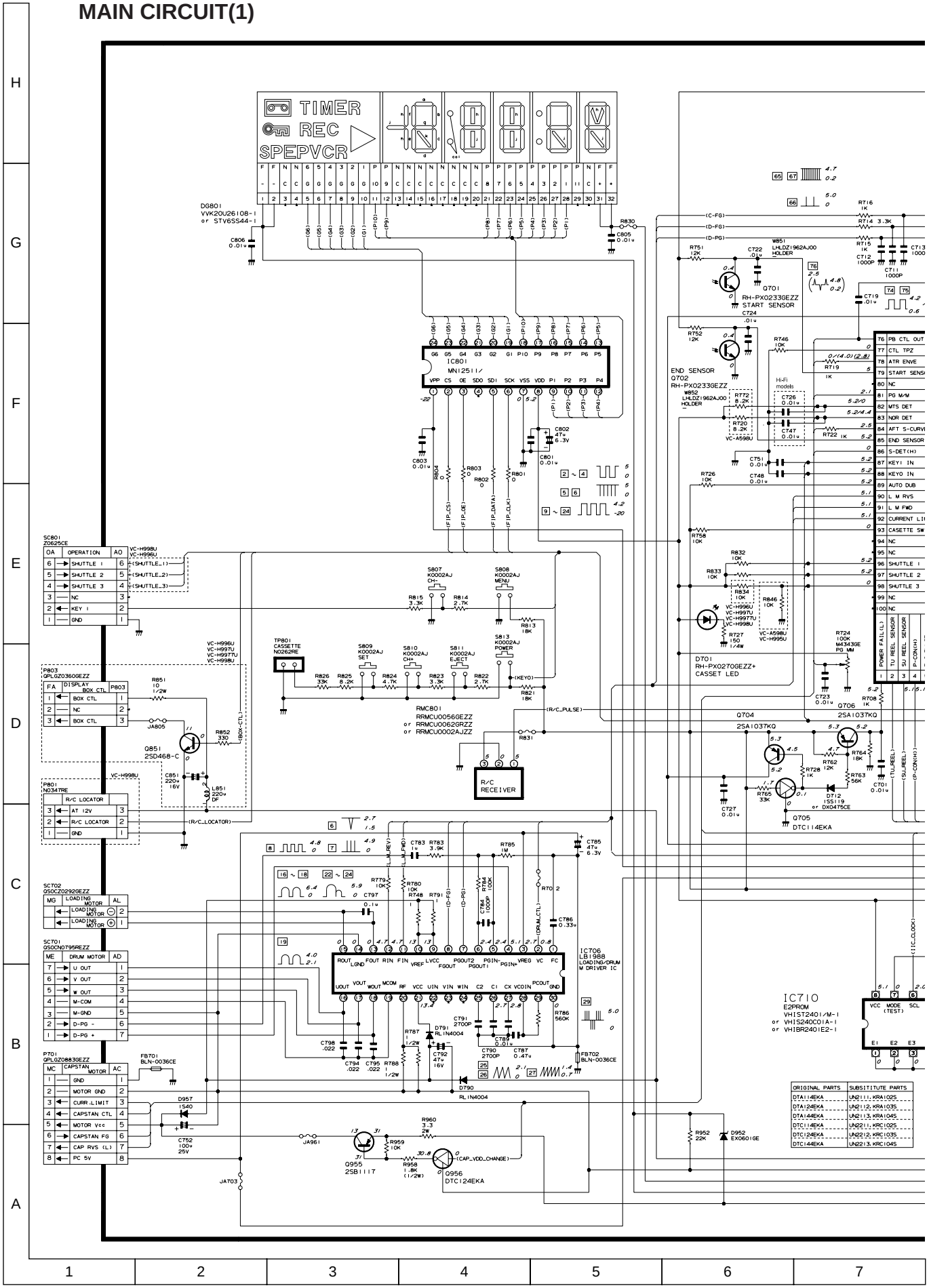


OPERATION CIRCUIT (VC-H996U/H997U/H9977U/H998U)

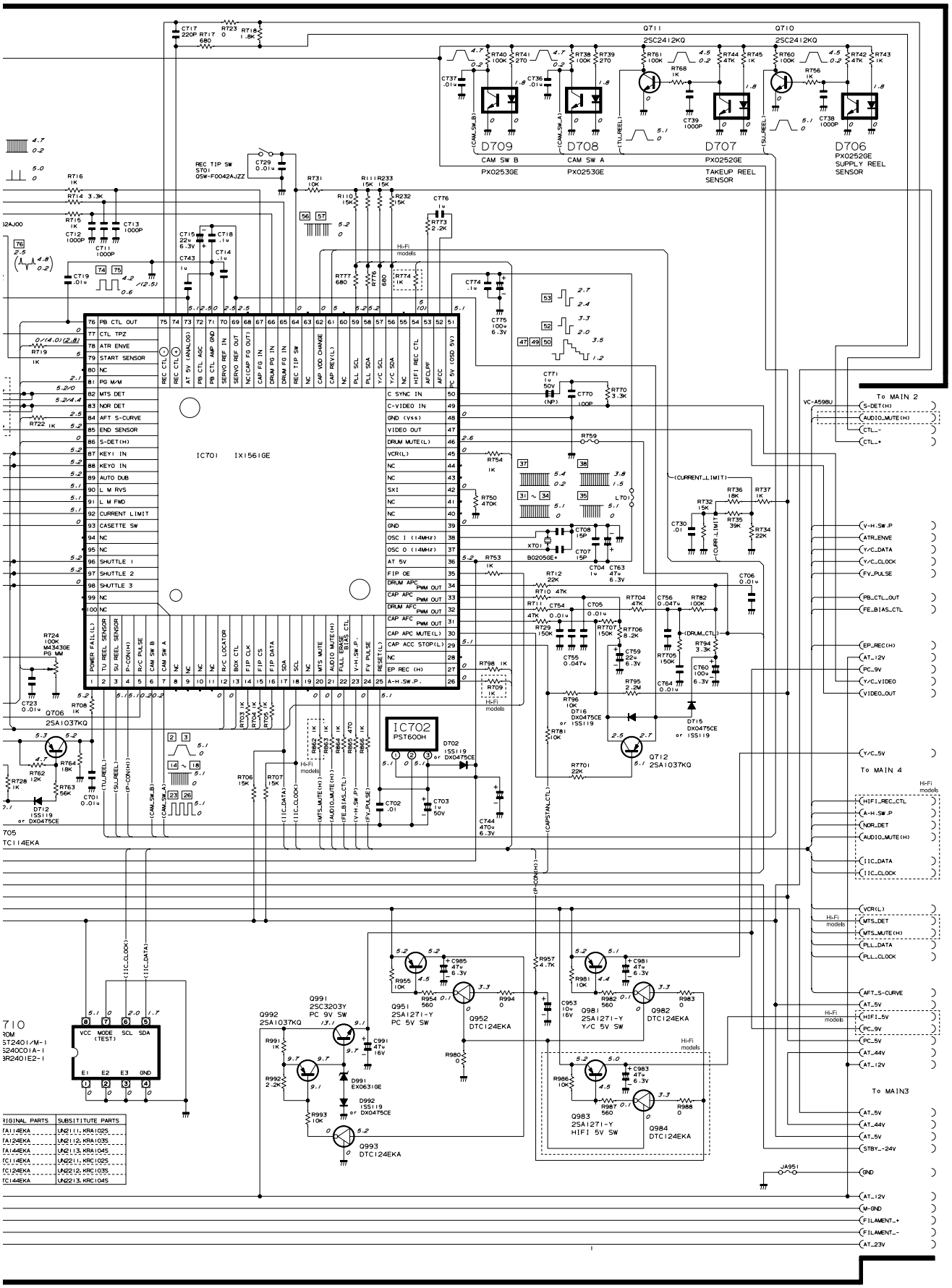


*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

MAIN CIRCUIT(1)



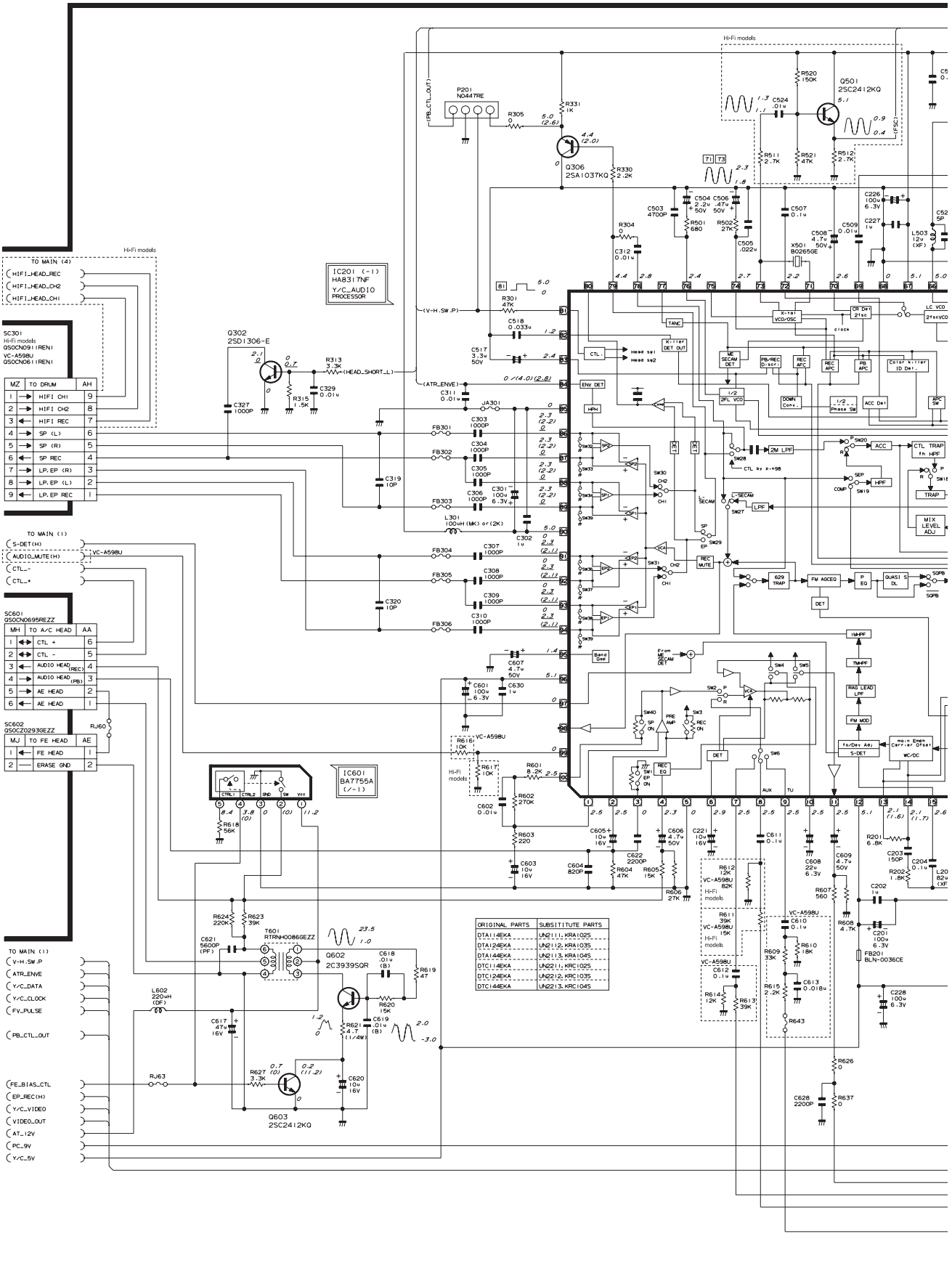
*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses



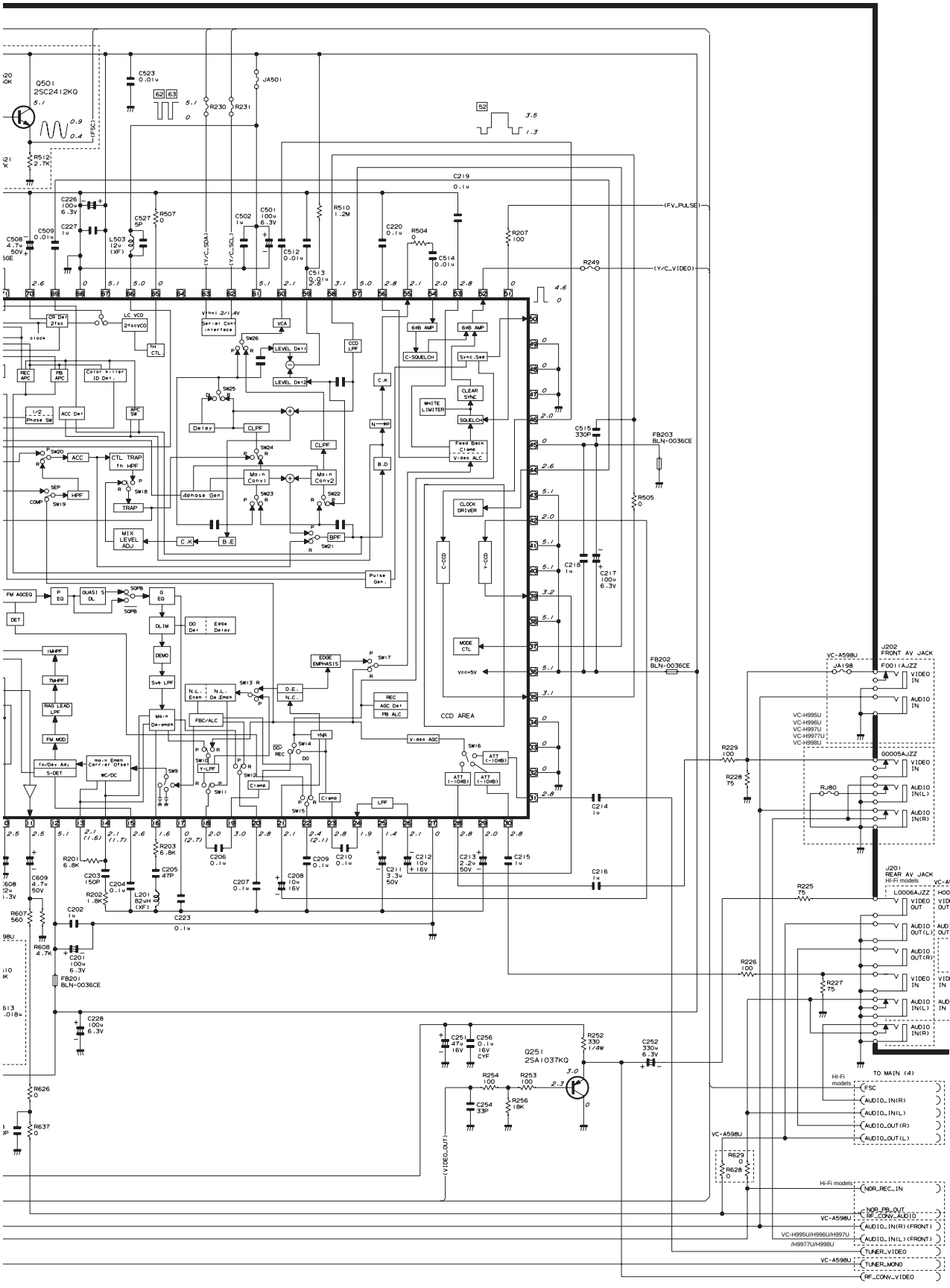
ORIGINAL PARTS	SUBSTITUTE PARTS
TA114EKA	UN2111-KRA102S
TA124EKA	UN2112-KRA103S
TA144EKA	UN2113-KRA104S
TC114EKA	UN2211-KRC102S
TC124EKA	UN2212-KRC103S
TC144EKA	UN2213-KRC104S

7	8	9	10	11	12	13

MAIN CIRCUIT(2)

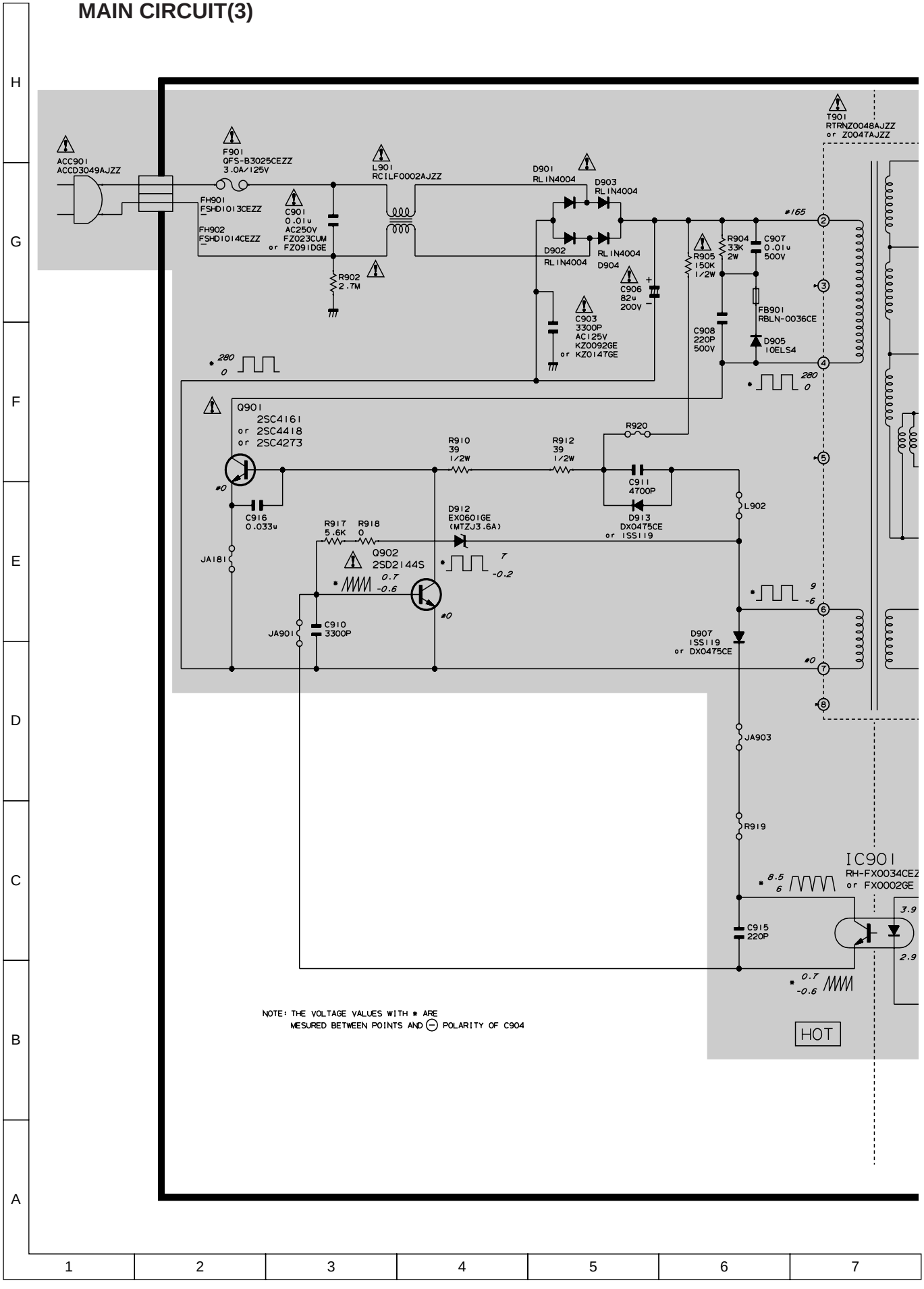


*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

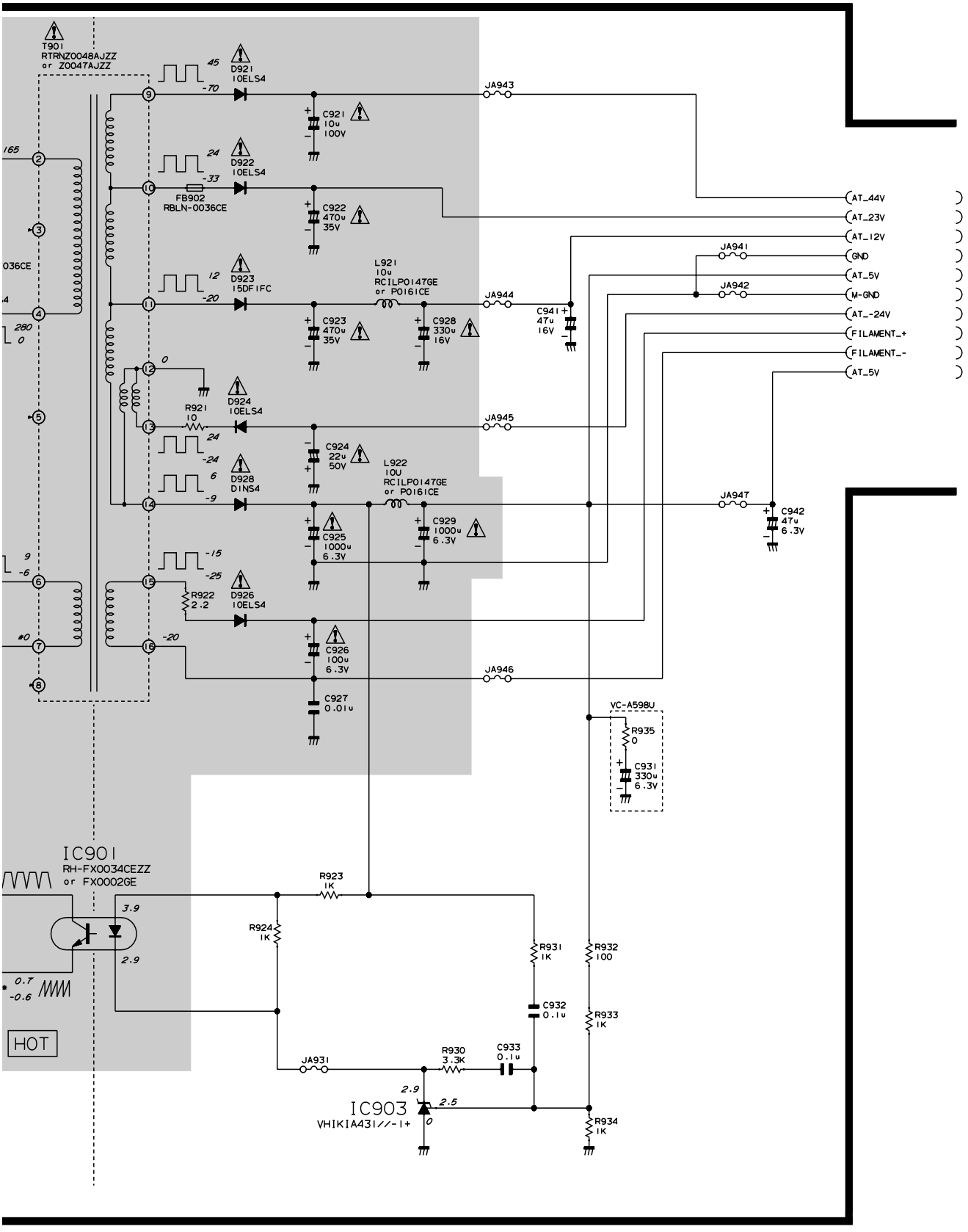


7	8	9	10	11	12	13

MAIN CIRCUIT(3)

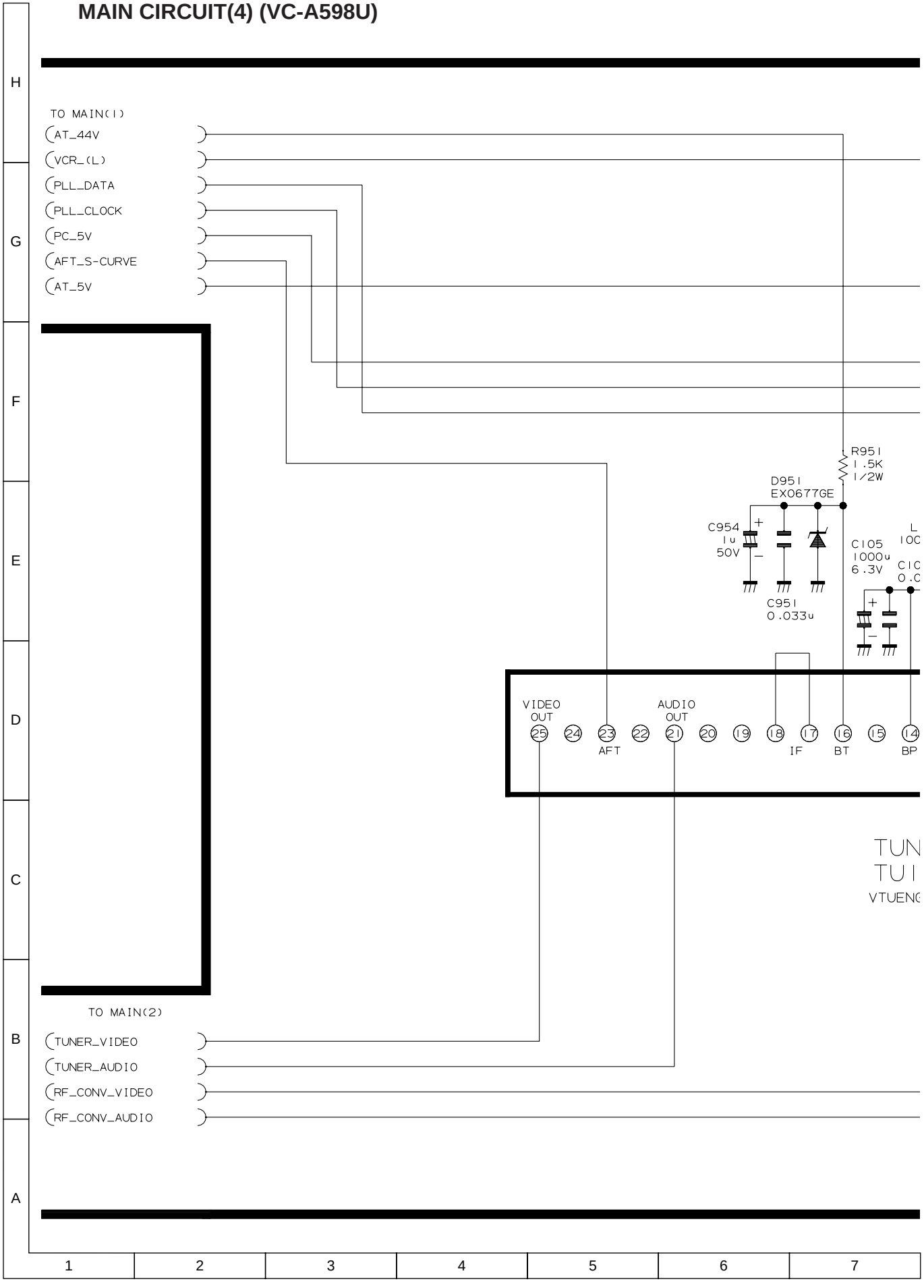


*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

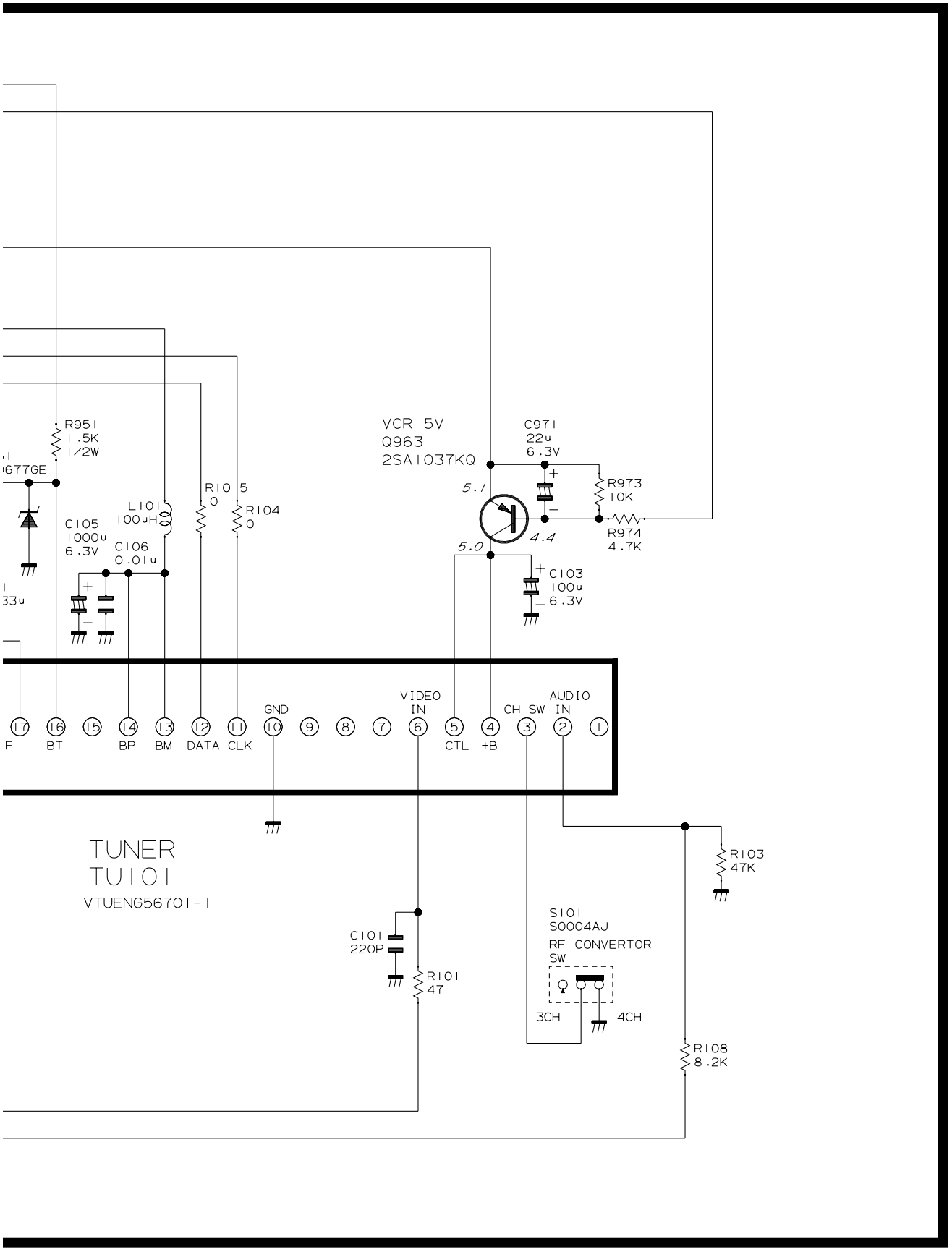


7	8	9	10	11	12	13

MAIN CIRCUIT(4) (VC-A598U)

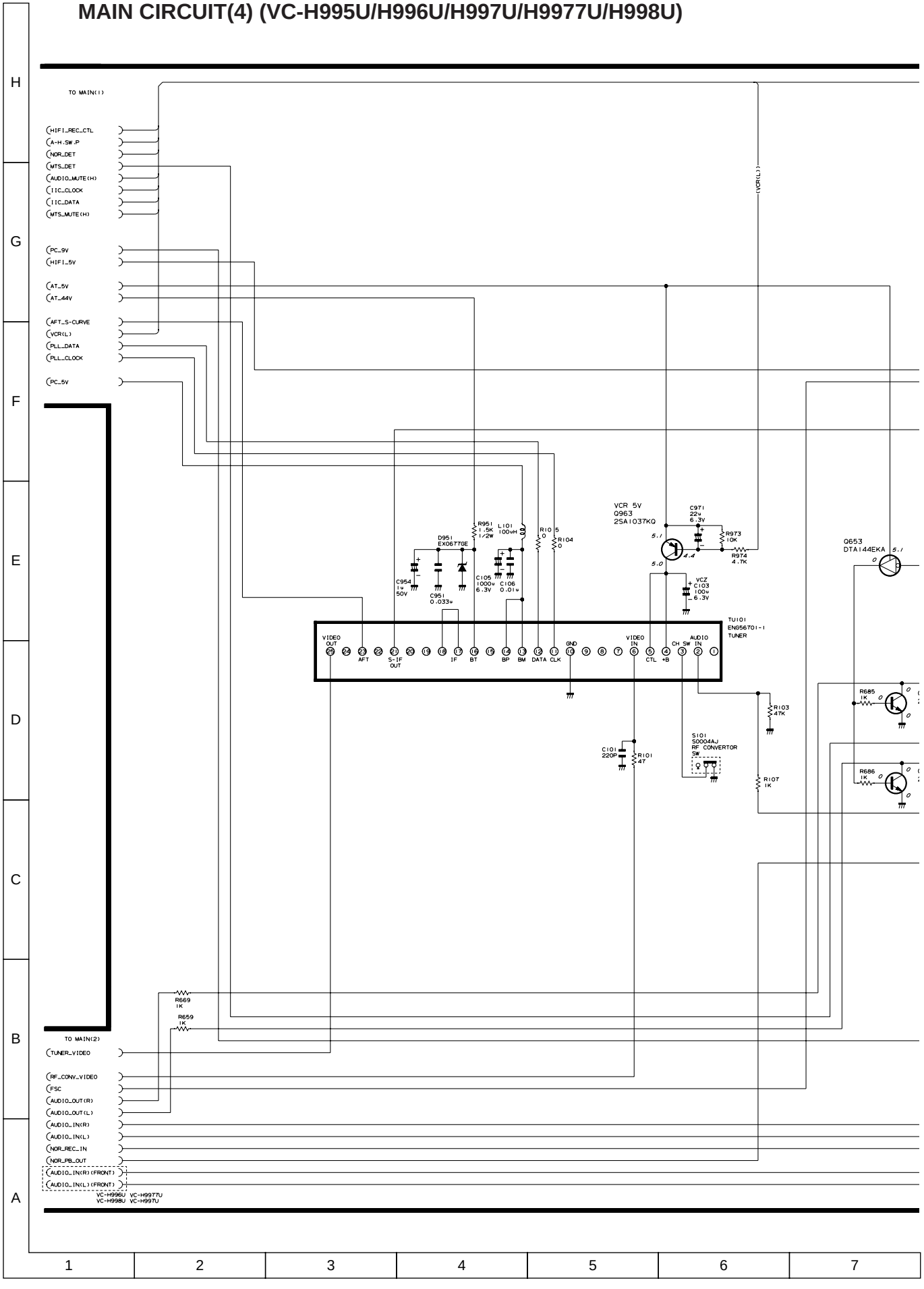


*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

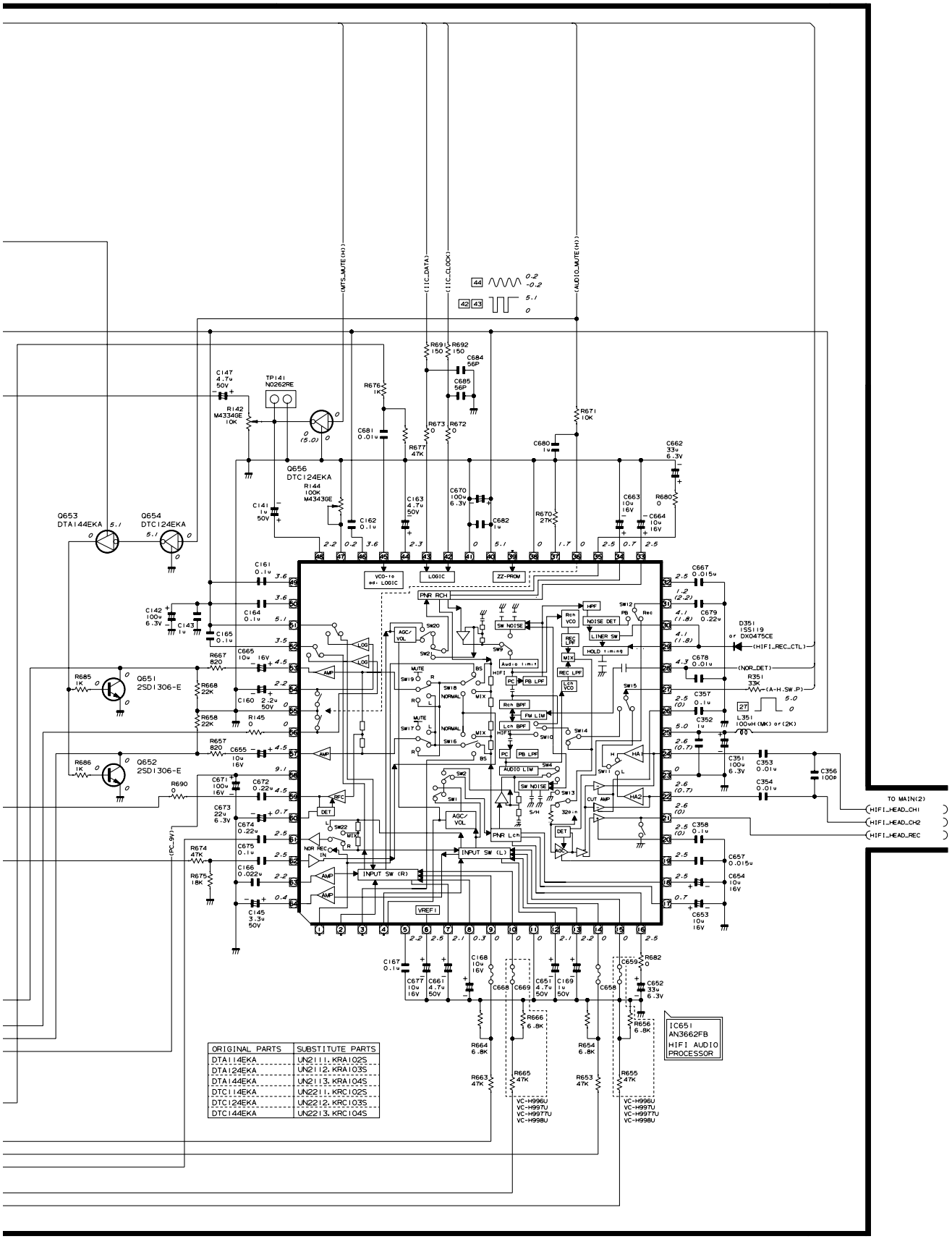


7	8	9	10	11	12	13

MAIN CIRCUIT(4) (VC-H995U/H996U/H997U/H9977U/H998U)



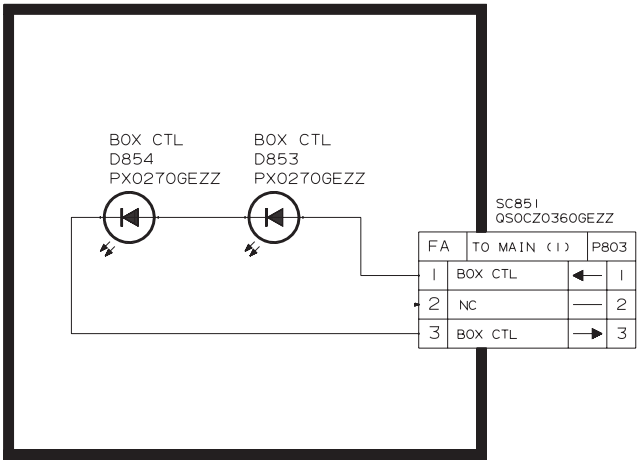
*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses



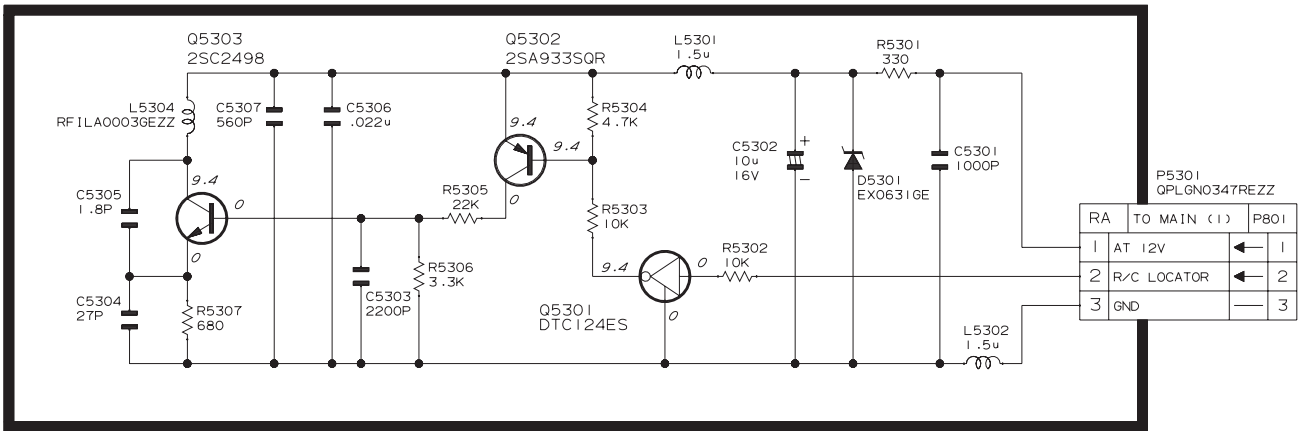
ORIGINAL PARTS	SUBSTITUTE PARTS
DTA114EKA	UN2111, KRA102S
DTA124EKA	UN2112, KRA103S
DTA144EKA	UN2113, KRA104S
DTC114EKA	UN2211, KRC102S
DTC124EKA	UN2212, KRC103S
DTC144EKA	UN2213, KRC104S

7	8	9	10	11	12	13

BOX CTL CIRCUIT (VC-H996U/H997U/H9977U/H998U)



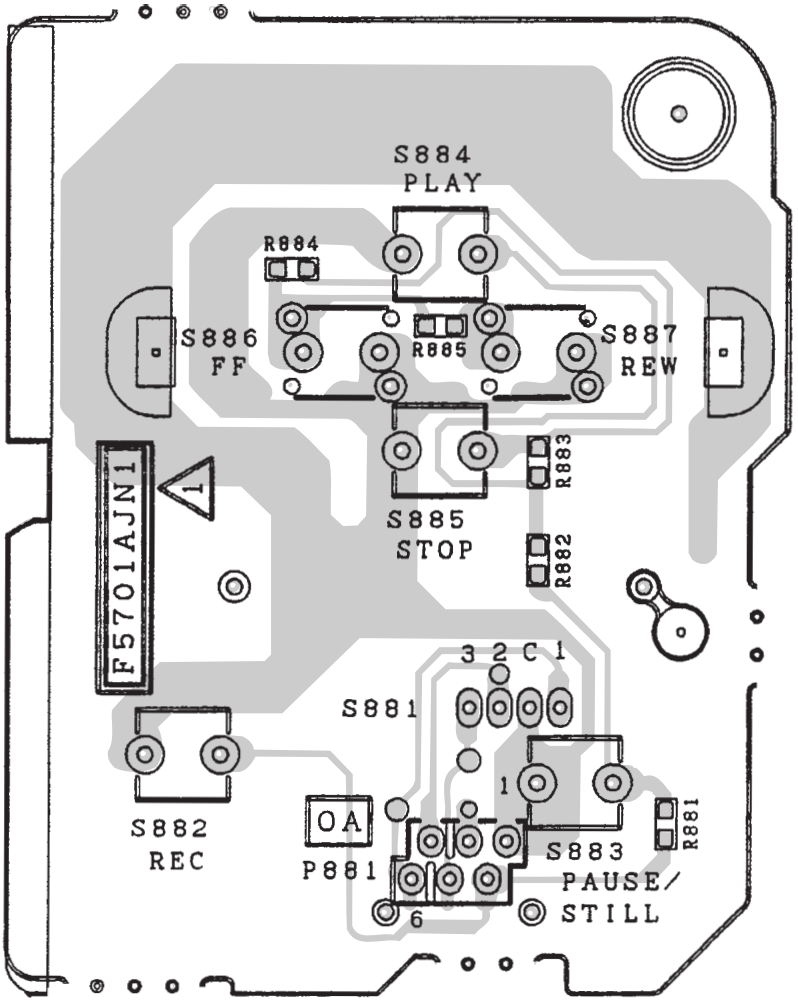
LOCATOR CIRCUIT (VC-H998U)



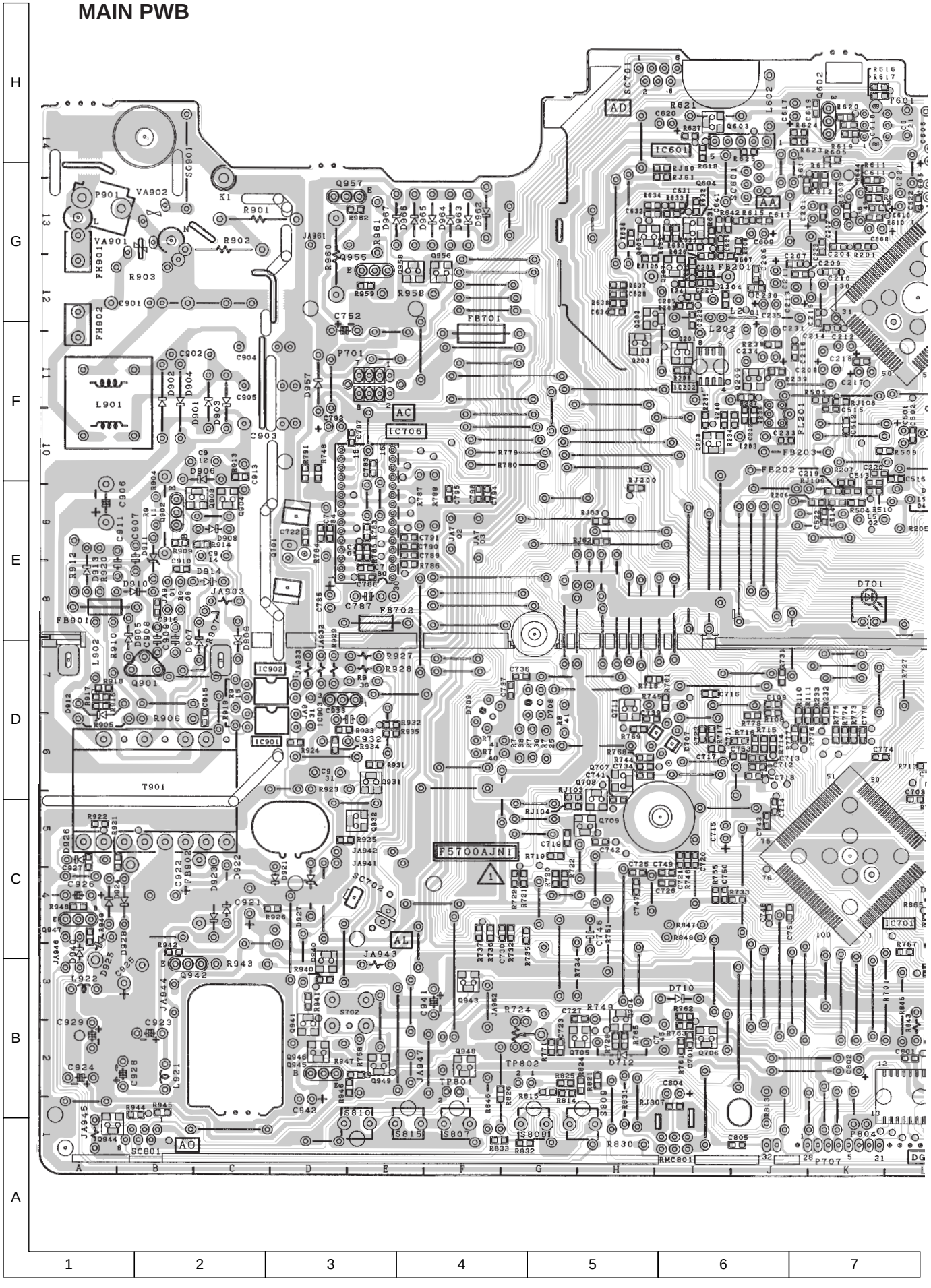
1	2	3	4	5	6	7

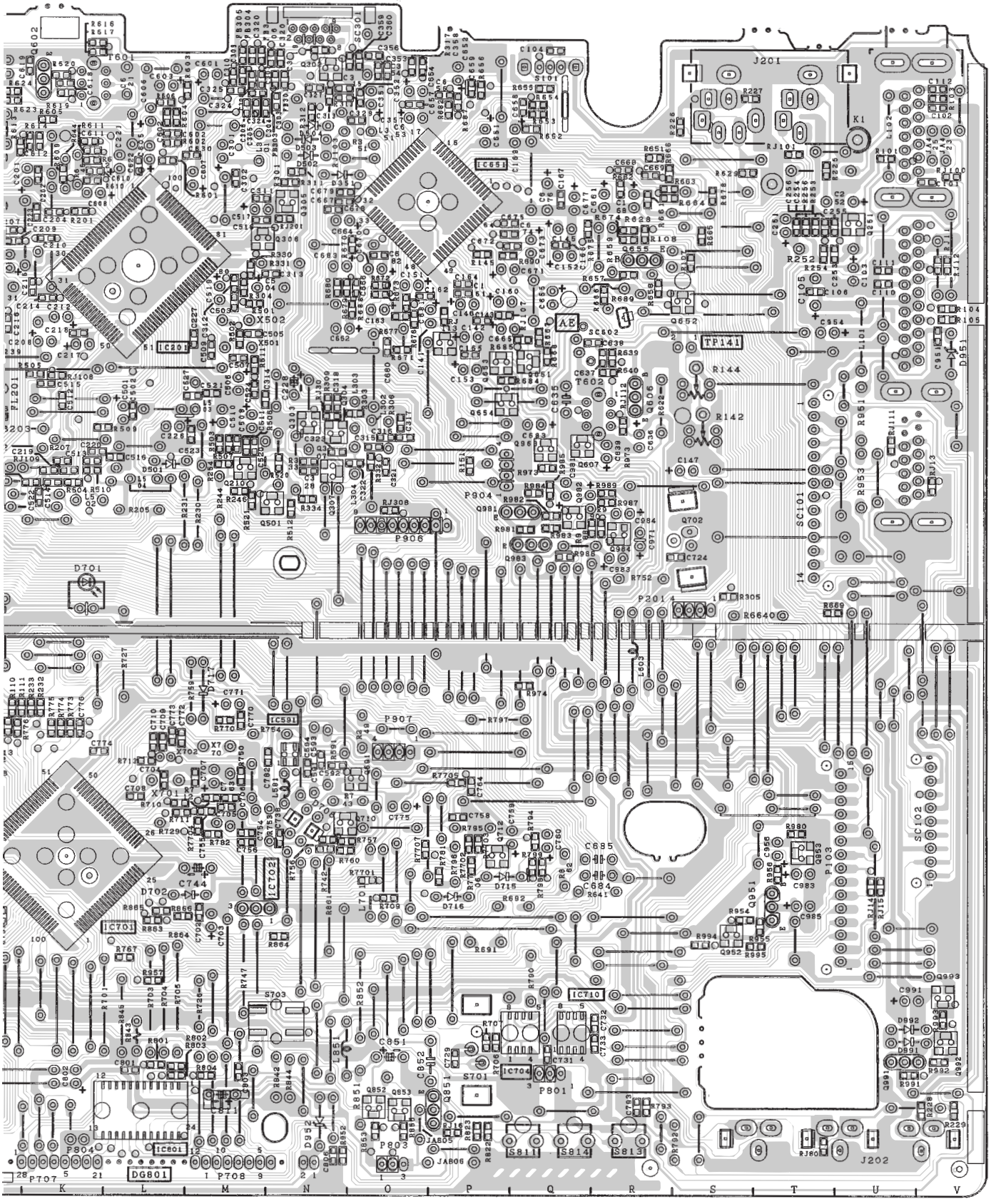
*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

PWB FOIL PATTERN
OPERATION PWB



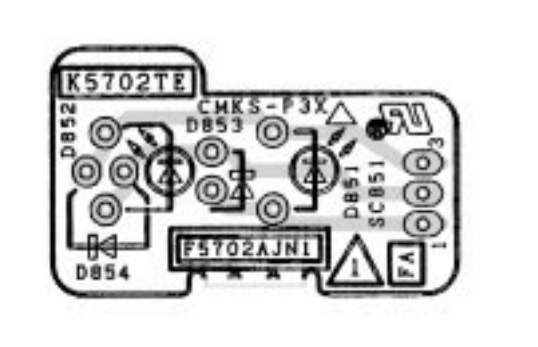
MAIN PWB


H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
F5700AJN1
T901
L901
IC601
IC701
IC706
IC902
IC901
D701
D710
D712
TP802
TP801
P701
P804
P707
Q957
Q955
Q956
Q901
Q942
Q943
Q709
Q707
Q708
Q705
Q706
FB701
FB702
FB201
FB202
FB203
L202
L922
L921
L902
T601
SC701
SC702
SC801
RMC801
JA941
JA942
JA943
JA944
JA945
JA946
JA947
JA948
JA961
JA962
JA963
JA903
AA
AC
AD
AE
AO
DG

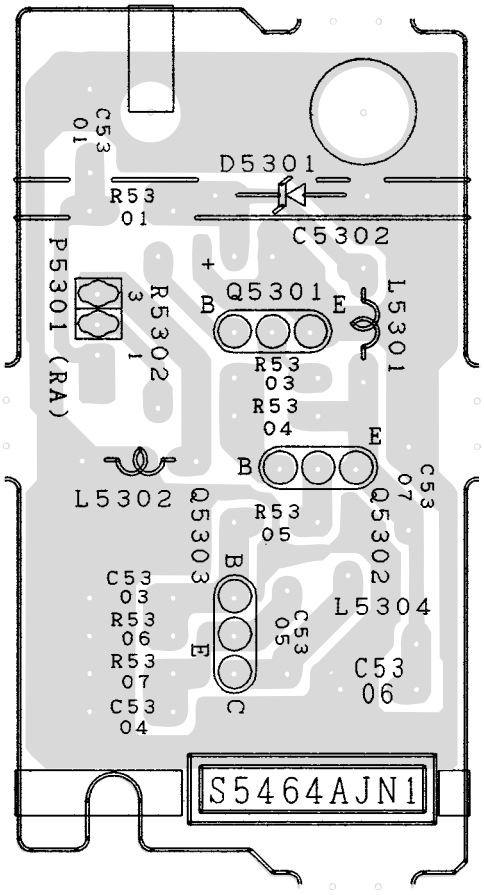


7	8	9	10	11	12	13

BOX CTL PWB (VC-H996U/H997U/H9977U/H998U)



LOCATOR PWB (VC-H998U)



10.PARTS LIST
PARTS REPLACEMENT

Many electrical and mechanial parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by " ⚠ " and shaded areas in the Replacement Parts Lists and Schematic Diagrams.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER **2. REF. NO.**
3. PART NO. **4. DESCRIPTION**

In **USA**: Contact your nearest SHARP Parts Distributor to order.
For location of SHARP Parts Distributor,
Please Call Toll-Free;
1-800-BE-SHARP

LISTE DES PIECES
CHANGE DES PIECES

De nombereuses pièces électriques et mécaniques de magnétoscopes présentent des caractéristiques particulières de sécurité.
Ces caractéristiques ne sont pas toujours évidentes à l'inspection visuelle at la protection qu'elles assurent ne peut pas toujours être obtenue par des pièces de rechange étalonnées à un régime de tension, une puissance, etc. superieurs. Les pièces de rechange qui présentent ces caractéristiques spéciales de sécuité, sont identifiées dans ce manuel: les pièces électriques qui présentent ces particularités, sont repérée par la marque " ⚠ " et sont hachurées dans les listes de piéces et dans les diagrammes schématiques.
La substitution d'une pièce de rechange par une autre qui ne présente pas les mêmes caractéristiques de sécurité que la pièce recommandée par l'usine et repérée dans ce manuel de service, peut provoquer une électrocution, un incendie ou tout autre sinstre.

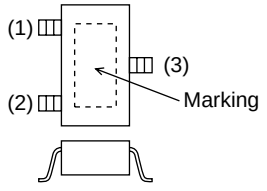
"COMMENT COMMANDER LES PIECES DE RECHANGE"

Pour que votre commande soit rapidement et correctement remplie, veuillez fournir les renseignements suivaints.

1.NUMERO DU MODELE **2.NO. DEREF**
3.NO. DE PIECE **4.DESCRIPTION**

In **CANADA**: Contact Sharp Electronics of Canada Limided
Phone (416)890-2100

HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING



(1) Base/Input
(2) Emitter/Ground
(3) Collector/Output

Fig. 1

Package	Marking	Parts No.
Fig. 1	FQ	VS2SA1037KQ-1
Fig. 1	BQ	VS2SC2412KQ-1
Fig. 1	16	VSDTA144EK/-1
Fig. 1	15	VSDTA124EK/-1
Fig. 1	25	VSDTC124EK/-1

MARK ★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code

PRINTED WIRING BOARD ASSEMBLIES
(NOT REPLACEMENT ITEM)

DUNTK5464TEV1	–	Locator Unit (VC-H998U)	—
DUNTK5700TEV8	–	Main Unit (VC-A598U)	—
DUNTK5700TEVL	–	Main Unit (VC-H995U)	—
DUNTK5700TEVM	–	Main Unit (VC-H996U/H9977U/H997U)	—
DUNTK5700TEVN	–	Main Unit (VC-H998U)	—
DUNTK5701TEV1	–	Operation Unit (VC-A598U/H995U)	—
DUNTK5701TEV4	–	Operation Unit (Except VC-A598U/H995U)	—
DUNTK5702TEV2	–	Box Ctl Unit (Except VC-A598U/H995U)	—

★ MARQUE: SECTION LIVRAISON DES PIECES DE RECHANGE

Ref. No.	Part No.	★	Description	Code

DUNTK5464TEV1
Locator Unit

TRANSISTORS

Q5301	VSDTC124ES/-1	V	DTC124ES	AB
Q5302	VS2SA933SQR1E	V	2SA933SQR	AB
Q5303	VS2SC2498//-1	V	2SC2498	AH

DIODE

D5301	RH-EX0631GEZZ	V	Zener Diode	AA

COILS

L5301	VP-XF1R5K0000	V	Paeking 1.5µH	AB
L5302	VP-XF1R5K0000	V	Paeking 1.5µH	AB
L5304	RFILA0003GEZZ	V	Filter	AG

CAPACITORS

C5301	VCKYD41HB102K	V	1000p	50V	Ceramic	AA
C5302	VCEA9M1CW106M	V	10	16V	Electrolytic	AB
C5303	VCKYD41CX222M	V	2200p	16V	Ceramic	AB
C5304	VCCSD41HL270J	V	27p	50V	Ceramic	AA
C5305	VCCCD41HH1R8M	V	1.8p	50V	Ceramic	AB
C5306	RC-QZA223TAYJ	V	0.022	50V	Mylar	AB
C5307	VCKYD41HB561K	V	560p	50V	Ceramic	AA

RESISTORS

R5301	VRD-RA2BE331J	V	330	1/8W	Carbon	AA
R5302	VRD-RA2BE103J	V	10k	1/8W	Carbon	AA
R5303	VRD-RA2BE103J	V	10k	1/8W	Carbon	AA
R5304	VRD-RA2BE472J	V	4.7k	1/8W	Carbon	AA
R5305	VRD-RA2BE223J	V	22k	1/8W	Carbon	AA
R5306	VRD-RA2BE332J	V	3.3k	1/8W	Carbon	AA
R5307	VRD-RA2BE681J	V	680	1/8W	Carbon	AA

MISCELLANEOUS PARTS

P5301	QPLGN0347REZZ	V	Plug, 3pin (RA)	AA
	QCNW-0309AJZZ	V	Connecting Cord (P801-P5301)	AF

Ref. No.	Part No.	★	Description	Code

DUNTK5700TEV8/VL/VM/VN
Main Unit

TUNER

NOTE: ***THE PARTS HERE SHOWN ARE SUPPLIED AS AN*** *ASSEMBLY BUT NOT INDEPENDENTLY.*

TU101	VTUENG56701-1	V	Tuner	BL

INTEGRATED CIRCUITS

IC201	VHiHA8317NF-1	V	HA118317NF	AZ
IC601	VHiBA7755A/-1	V	BA7755A	AE
IC651	VHiAN3662FB-1	V	AN3662FBP (Except VC-A598U)	AZ
IC701	RH-iX1561GEN2	V	I.C.	BC
IC702	VHiPST600H/-1	V	IC-PST600H-2	AE
IC706	VHiLB1988//-1	V	LB1988	AQ
IC710	VHiBR2401E2-1	V	BR24C01AF	AF
IC801	VHiMN12511/-1	V	MN12511	AQ
IC903	VHiKiA431//-1	V	KIA431	AE

TRANSITORS

Q251	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q302	VS2SD1306-E1E	V	2SD1306-E	AD
Q306	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q501	VS2SC2412KQ-1	V	2SC2412KQ (Except VC-A598U)	AA
Q602	VS2C3939SQR-1	V	2C3939SQR	AC
Q603	VS2SC2412KQ-1	V	2SC2412KQ	AA
Q651	VS2SD1306-E1E	V	2SD1306-E (Except VC-A598U)	AD
Q652	VS2SD1306-E1E	V	2SD1306-E (Except VC-A598U)	AD
Q653	VSUN2113///-1	V	UN2113 (Except VC-A598U)	AA
Q654	VSUN2212///-1	V	UN2212 (Except VC-A598U)	AA
Q656	VSUN2212///-1	V	UN2212 (Except VC-A598U)	AA
Q704	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q705	VSKRC102S//-1	V	KRC102S (VC-A598U)	AA
Q705	VSUN2211///-1	V	UN2211 (Except VC-A598U)	AA
Q706	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q710	VS2SC2412KQ-1	V	2SC2412KQ	AA
Q711	VS2SC2412KQ-1	V	2SC2412KQ	AA
Q712	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q851	VS2SD468-AC-1	V	2SD468-AC (Except VC-A598U/H995U)	AC
⚠ Q901	VS2SC4161//1E	V	2SC4161	AL
⚠ Q902	VS2SD2144S/-1	V	2SD2144S	AC
Q951	VS2SA1271-Y-1	V	2SA1271-Y	AB
Q952	VSKRC103S//-1	V	KRC103S (VC-A598U)	AA
Q952	VSUN2212///-1	V	UN2212 (Except VC-A598U)	AA
Q955	VS2SB1117KU1E	V	2SB1117KU	AE
Q956	VSKRC103S//-1	V	KRC103S (VC-A598U)	AA
Q956	VSUN2212///-1	V	UN2212 (Except VC-A598U)	AA
Q963	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q981	VS2SA1271-Y-1	V	2SA1271-Y	AB
Q982	VSKRC103S//-1	V	KRC103S (VC-A598U)	AA
Q982	VSUN2212///-1	V	UN2212 (Except VC-A598U)	AA
Q983	VS2SA1271-Y-1	V	2SA1271-Y (Except VC-A598U)	AB
Q984	VSUN2212///-1	V	UN2212 (Except VC-A598U)	AA
Q991	VS2SC3203Y/-1	V	2SC3203Y	AB
Q992	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q993	VSKRC103S//-1	V	KRC103S (VC-A598U)	AA
Q993	VSUN2212///-1	V	UN2212 (Except VC-A598U)	AA

DIODES

DG801	VVKSTV6SS44-1	V	Display (VC-A598U)	AW
DG801	VVK20U26108-1	V	Display (Except VC-A598U)	AW
D351	RH-DX0475CEZZ	V	Diode (Except VC-A598U)	AB
D701	RH-PX0270GEZZ	J	Cassette LED	AC
D702	RH-DX0475CEZZ	V	Diode	AB
D706	RH-PX0252GEZZ	J	Supply Reel Sensor	AF
D707	RH-PX0252GEZZ	J	Take-up Reel Sensor	AF
D708	RH-PX0253GEZZ	J	CAM Switch A	AF
D709	RH-PX0253GEZZ	J	Cam Switch B	AF
D712	RH-DX0475CEZZ	V	Diode	AB
D715	RH-DX0475CEZZ	V	Diode	AB
D716	RH-DX0475CEZZ	V	Diode	AB
D790	VHDRL1N4004-1	V	DRL1N4004	AD
D791	VHDRL1N4004-1	V	DRL1N4004	AD
⚠ D901	VHDRL1N4004-1	V	DRL1N4004	AD
⚠ D902	VHDRL1N4004-1	V	DRL1N4004	AD
⚠ D903	VHDRL1N4004-1	V	DRL1N4004	AD
⚠ D904	VHDRL1N4004-1	V	DRL1N4004	AD
⚠ D905	VHD10ELS4//-1	V	10ELS4	AD
⚠ D907	RH-DX0475CEZZ	V	Diode	AB
⚠ D912	RH-EX0601GEZZ	V	Zener Diode	AA
⚠ D913	RH-DX0475CEZZ	V	Diode	AB
⚠ D921	VHD10ELS4//-1	V	10ELS4	AD
⚠ D922	VHD10ELS4//-1	V	10ELS4	AD
⚠ D923	VHD15DF1FC/1E	V	15DF1FC	AD
⚠ D924	VHD10ELS4//-1	V	10ELS4	AD
⚠ D926	VHD10ELS4//-1	V	10ELS4	AD
⚠ D928	VHDD1NS4///-1	V	1NS4	AE
D951	RH-EX0677GEZZ	V	Zener Diode	AB
D952	RH-EX0601GEZZ	V	Zener Diode	AA
D957	VHD1S40////-1	V	1S40	AF
D991	RH-EX0631GEZZ	J	Zener Diode	AA
D992	RH-DX0475CEZZ	V	Diode	AB
⚠ IC901	RH-FX0034CEZZ	V	PC817	AE
Q701	RH-PX0233GEZZ	J	Start Sensor	AD
Q702	RH-PX0233GEZZ	J	End Sensor	AD

CRYSTALS

X501	RCRSB0265GEZZ	J	Crystal	AH
X701	RCRSB0205GEZZ	J	Crystal	AM

COILS

L101	VP-CF101K0000	V	Paeking 100µH	AB
L201	VP-XF820K0000	V	Paeking 82µH	AB
L301	VP-MK101K0000	V	Paeking 100µH (VC-A598U)	AB
L301	VP-2K101K0000	V	Paeking 100µH (Except VC-A598U)	AC
L351	VP-2K101K0000	V	Paeking 100µH (Except VC-A598U)	AC
L503	VP-XF120K0000	V	Paeking 12µH	AB
L602	VP-DF221K0000	V	Paeking 220µH	AB
L851	VP-DF221K0000	V	Paeking 220µH (Except VC-A598U/H995U)	AB
⚠ L901	RCILF0002AJZZ	V	Coil	AK
⚠ L921	RCILP0147GEZZ	V	10µH	AF
⚠ L922	RCILP0147GEZZ	V	10µH	AF

TRANSFORMERS

T601	RTRNH0086GEZZ	J	OSC. Transformer	AD
⚠ T901	RTRNZ0048AJZZ	V	Transformer	AQ

CONTROL

R142	RVR-M4334GEZZ	J	Variable Resistor (Except VC-A598U)	AB
R144	RVR-M4343GEZZ	J	100k (Except VC-A598U)	AB
R724	RVR-M4343GEZZ	J	100k, PG MM	AB

CAPACITORS

C101	VCKYCY1HB221K	V	220p	50V	Ceramic	AA
C103	VCEA9M0JW107M	V	100	6.3V	Electrolytic	AB
C105	VCEA0A0JW108M	V	1000	6.3V	Electrolytic	AC
C106	VCKYCY1HF103Z	V	0.01	50V	Ceramic	AA

DUNTK5700TEV8/VL/VM/VN
Main Unit (Continued)

Ref. No.	Part No.	★	Description	Code
C141	VCEA9M1HW105M	V	1 50V Electrolytic (Except VC-A598U)	AB
C142	VCEA9M0JW107M	V	100 6.3V Electrolytic (Except VC-A598U)	AB
C143	VCKYCY0JF105Z	V	1 6.3V Ceramic (Except VC-A598U)	AB
C145	VCEA9M1HW335M	V	3.3 50V Electrolytic (Except VC-A598U)	AB
C147	VCEA9M1HW475M	V	4.7 50V Electrolytic (Except VC-A598U)	AB
C160	VCEA9M1HW225M	V	2.2 50V Electrolytic (Except VC-A598U)	AB
C161	VCKYCY1CB104K	V	0.1 16V Ceramic (Except VC-A598U)	AB
C162	VCKYCY1CB104K	V	0.1 16V Ceramic (Except VC-A598U)	AB
C163	VCEA9M1HW475M	V	4.7 50V Electrolytic (Except VC-A598U)	AB
C164	VCKYCY1CB104K	V	0.1 16V Ceramic (Except VC-A598U)	AB
C165	VCKYCY1CB104K	V	0.1 16V Ceramic (Except VC-A598U)	AB
C166	VCKYCY1EB223K	V	0.022 25V Ceramic (Except VC-A598U)	AA
C167	VCKYCY1CB104K	V	0.1 16V Ceramic (Except VC-A598U)	AB
C168	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C169	VCEA9M1HW105M	V	1 50V Electrolytic (Except VC-A598U)	AB
C201	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C202	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C203	VCCCCY1HH151J	V	150p 50V Ceramic	AA
C204	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C205	VCCCCY1HH470J	V	47p 50V Ceramic	AA
C206	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C207	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C208	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C209	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C210	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C211	VCEA9M1HW335M	V	3.3 50V Electrolytic	AB
C212	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C213	VCEA9M1HW225M	V	2.2 50V Electrolytic	AB
C214	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C215	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C216	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C217	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C218	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C219	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C220	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C221	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C223	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C226	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C227	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C228	VCEA9A0JW107M	V	100 6.3V Electrolytic	AB
C251	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C252	VCEA0A0JW337M	V	330 6.3V Electrolytic	AC
C254	VCCCCY1HH330J	V	33p 50V Ceramic	AA
C256	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C301	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C302	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C303	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C304	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C305	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C306	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C307	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C308	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C309	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C310	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C311	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C312	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C319	VCCCCY1HH100D	V	10p 50V Ceramic	AA
C320	VCCCCY1HH100D	V	10p 50V Ceramic	AA
C327	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C329	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C351	VCEA9M0JW107M	V	100 6.3V Electrolytic (Except VC-A598U)	AB
C352	VCKYCY0JF105Z	V	1 6.3V Ceramic (Except VC-A598U)	AB
C353	VCKYCY1HF103Z	V	0.01 50V Ceramic (Except VC-A598U)	AA
C354	VCKYCY1HF103Z	V	0.01 50V Ceramic (Except VC-A598U)	AA
C356	VCCCCY1HH101J	V	100p 50V Ceramic (Except VC-A598U)	AA
C357	VCKYCY1CB104K	V	0.1 16V Ceramic (Except VC-A598U)	AB
C358	VCKYCY1CB104K	V	0.1 16V Ceramic (Except VC-A598U)	AB
C501	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C502	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C503	VCKYCY1HB472K	V	4700p 50V Ceramic	AA
C504	VCEA9A1HW225M	V	2.2 50V Electrolytic	AB
C505	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C506	VCEA9M1HW474M	V	0.47 50V Electrolytic	AB
C507	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C508	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C509	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C512	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C513	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C514	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C515	VCKYCY1HB331K	V	330p 50V Ceramic	AA
C517	VCEA9M1HW335M	V	3.3 50V Electrolytic	AB
C518	VCKYCY1HF333Z	V	0.033 50V Ceramic	AA
C523	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C524	VCKYCY1HF103Z	V	0.01 50V Ceramic (Except VC-A598U)	AA
C527	VCCCCY1HH5R0C	V	5p 50V Ceramic	AA
C601	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C602	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C603	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C604	VCKYCY1HB821K	V	820p 50V Ceramic	AA
C605	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C606	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C607	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C608	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C609	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C610	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-A598U)	AA
C611	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C612	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-A598U)	AA
C613	VCKYCY1EB183K	V	0.018 25V Ceramic (VC-A598U)	AA
C617	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C618	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C619	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C620	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C621	VCQPYA2AA562J	V	5600p 100V Mylar	AC
C622	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C628	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C630	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C651	VCEA9M1HW475M	V	4.7 50V Electrolytic (Except VC-A598U)	AB
C652	VCEA9M0JW336M	V	33 6.3V Electrolytic (Except VC-A598U)	AE
C653	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C654	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C655	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C657	VCKYCY1EB153K	V	0.015 25V Ceramic (Except VC-A598U)	AA
C661	VCEA9M1HW475M	V	4.7 50V Electrolytic (Except VC-A598U)	AB

DUNTK5700TEV8/VL/VM/VN
Main Unit (Continued)

Ref. No.	Part No.	★	Description	Code
C662	VCEA9M0JW336M	V	33 6.3V Electrolytic (Except VC-A598U)	AE
C663	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C664	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C665	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C667	VCKYCY1EB153K	V	0.015 25V Ceramic (Except VC-A598U)	AA
C670	VCEA9M0JW107M	V	100 6.3V Electrolytic (Except VC-A598U)	AB
C671	VCEA9M1CW107M	V	100 16V Electrolytic (Except VC-A598U)	AB
C672	VCKYCY1CF224Z	V	0.22 16V Ceramic (Except VC-A598U)	AA
C673	VCEA9M0JW226M	V	22 6.3V Electrolytic (Except VC-A598U)	AB
C674	VCKYCY1CF224Z	V	0.22 16V Ceramic (Except VC-A598U)	AA
C675	VCKYCY1CF104Z	V	0.1 16V Ceramic (Except VC-A598U)	AA
C677	VCEA9M1CW106M	V	10 16V Electrolytic (Except VC-A598U)	AB
C678	VCKYCY1HF103Z	V	0.01 50V Ceramic (Except VC-A598U)	AA
C679	VCKYCY1CF224Z	V	0.22 16V Ceramic (Except VC-A598U)	AA
C680	VCKYCY0JF105Z	V	1 6.3V Ceramic (Except VC-A598U)	AB
C681	VCKYCY1HF103Z	V	0.01 50V Ceramic (Except VC-A598U)	AA
C682	VCKYCY0JF105Z	V	1 6.3V Ceramic (Except VC-A598U)	AB
C684	VCCCPA1HH560J	V	56p 50V Ceramic (Except VC-A598U)	AA
C685	VCCCPA1HH560J	V	56p 50V Ceramic (Except VC-A598U)	AA
C701	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C702	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C703	VCEA9M1HW105M	V	1 50V Electrolytic	AB
C704	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C705	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C706	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C707	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C708	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C709	VCCCCY1HH180J	V	18p 50V Ceramic	AA
C710	VCCCCY1HH180J	V	18p 50V Ceramic	AA
C711	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C712	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C713	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C714	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C715	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C717	VCKYCY1HB221K	V	220p 50V Ceramic	AA
C718	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C719	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C722	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C723	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C724	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C726	VCKYCY1HF103Z	V	0.01 50V Ceramic (Except VC-A598U)	AA
C727	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C729	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C730	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C736	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C737	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C738	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C739	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C743	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C744	VCEA2A0JW477M	V	470 6.3V Electrolytic	AB
C747	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C748	VCKYCY1HF103Z	V	0.01 50V Ceramic (Except VC-A598U)	AA
C751	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C752	VCEA2A1EW107M	V	100 25V Electrolytic	AB
C754	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C755	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA
C756	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA
C759	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C760	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C763	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C764	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C770	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C771	VCE9EM1HW105M	V	1 50V Elect.(N.P)	AB
C774	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C775	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C776	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C783	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C784	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C785	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C786	VCKYCY1CF334Z	V	0.33 16V Ceramic	AA
C787	VCFYHA1HA474J	V	0.47 50V	AD
C789	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C790	VCKYCY1HB272K	V	2700p 50V Ceramic	AA
C791	VCKYCY1HB272K	V	2700p 50V Ceramic	AA
C792	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C793	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C794	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C795	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C797	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C798	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C801	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C802	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C803	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C805	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C806	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C851	VCEAGA1CW227M	V	220 16V Electrolytic (Except VC-A598U/H995U)	AC
C852	VCKYD41CY103N	V	0.01 16V Ceramic (Except VC-A598U/H995U)	AA
⚠ C901	RC-FZ023CUMZZ	V	0.01 AC250V Mylar	AF
⚠ C903	RC-KZ0147GEZZ	V	3300p AC125V Ceramic	AC
⚠ C906	RC-EZ0238CEZZ	V	82 200V Electrolytic	AE
⚠ C907	RC-KZ0029CEZZ	V	0.01 500V Ceramic	AC
⚠ C908	VCKYPA2HB221K	V	220p 500V Ceramic	AA
⚠ C910	VCKYCY1HB332K	V	3300p 50V Ceramic	AA
⚠ C911	VCQYTA1HM472K	V	4700p 50V Mylar	AB
⚠ C915	VCKYCY1HB221K	V	220p 50V Ceramic	AA
⚠ C916	VCKYCY1HF333Z	V	0.033 50V Ceramic	AA
⚠ C921	VCEAGA2AW106M	V	10 100V Electrolytic	AC
⚠ C922	VCEA0A1VW477M	V	470 35V Electrolytic	AB
⚠ C923	VCEA0A1VW477M	V	470 35V Electrolytic	AB
⚠ C924	VCEAGA1HW226M	V	22 50V Electrolytic	AB
⚠ C925	VCEA0A0JW108M	V	1000 6.3V Electrolytic	AC
⚠ C926	VCEAGA0JW107M	V	100 6.3V Electrolytic	AB
⚠ C927	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
⚠ C928	VCEAGA1CW337M	V	330 16V Electrolytic	AC
⚠ C929	VCEA0A0JW108M	V	1000 6.3V Electrolytic	AC
C931	VCEA0A0JW337M	V	330 6.3V Electrolytic (VC-A598U)	AC
C932	VCQYTA1HM104J	V	0.1 50V Mylar	AA
C933	VCQYTA1HM104J	V	0.1 50V Mylar	AA
C941	VCEA9A1CW476M	V	47 16V Electrolytic	AB
C942	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C951	VCKYCY1HF333Z	V	0.033 50V Ceramic	AA
C953	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C954	VCEA9M1HW105M	V	1 50V Electrolytic	AB
C971	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C981	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C983	VCEA9M0JW476M	V	47 6.3V Electrolytic (Except VC-A598U)	AB
C985	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C991	VCEA9M1CW476M	V	47 16V Electrolytic	AB

RESISTORS

R101	VRS-CY1JF470J	V	47	1/16W	Metal Oxide	AA

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Main Unit (Continued)

Ref. No.	Part No.	★	Description	Code
R103	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R107	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (Except VC-A598U)	AA
R108	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A598U)	AA
R110	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R111	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R201	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R202	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R203	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R207	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R225	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA
R226	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R227	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA
R228	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA
R229	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R232	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R233	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R252	VRD-RA2EE331J	V	330 1/4W Carbon	AA
R253	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R254	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R256	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R301	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R313	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R315	VRS-CY1JF152J	V	1.5k 1/16W Metal Oxide	AA
R330	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R331	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R351	VRD-RA2BE333J	V	33k 1/8W Carbon (Except VC-A598U)	AA
R501	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R502	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R510	VRS-CY1JF125J	V	1.2M 1/16W Metal Oxide	AA
R511	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide (Except VC-A598U)	AA
R512	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide (Except VC-A598U)	AA
R520	VRS-CY1JF154J	V	150k 1/16W Metal Oxide (Except VC-A598U)	AA
R521	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (Except VC-A598U)	AA
R601	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R602	VRS-CY1JF274J	V	270k 1/16W Metal Oxide	AA
R603	VRS-CY1JF221J	V	220 1/16W Metal Oxide	AA
R604	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R605	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R606	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R607	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R608	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R609	VRS-CY1JF333J	V	33k 1/16W Metal Oxide (VC-A598U)	AA
R610	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (VC-A598U)	AA
R611	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A598U)	AA
R611	VRS-CY1JF153J	V	15k 1/16W Metal Oxide (Except VC-A598U)	AA
R612	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A598U)	AA
R612	VRS-CY1JF823J	V	82k 1/16W Metal Oxide (Except VC-A598U)	AA
R613	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A598U)	AA
R614	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A598U)	AA
R615	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide (VC-A598U)	AA
R616	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-A598U)	AA
R617	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (Except VC-A598U)	AA
R618	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R619	VRS-CY1JF470J	V	47 1/16W Metal Oxide	AA
R620	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R621	VRD-RA2EE4R7J	V	4.7 1/4W Carbon	AA
R623	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA
R624	VRS-CY1JF224J	V	220k 1/16W Metal Oxide	AA
R627	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R653	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (Except VC-A598U)	AA
R654	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (Except VC-A598U)	AA
R655	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (Except VC-A598U)	AA
R656	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (Except VC-A598U)	AA
R657	VRS-CY1JF821J	V	820 1/16W Metal Oxide (Except VC-A598U)	AA
R658	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (Except VC-A598U)	AA
R659	VRD-RA2BE102J	V	1k 1/8W Carbon (Except VC-A598U)	AA
R663	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (Except VC-A598U)	AA
R664	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (Except VC-A598U)	AA
R665	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (Except VC-A598U)	AA
R666	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (Except VC-A598U)	AA
R667	VRS-CY1JF821J	V	820 1/16W Metal Oxide (Except VC-A598U)	AA
R668	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (Except VC-A598U)	AA
R669	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (Except VC-A598U)	AA
R670	VRS-CY1JF273J	V	27k 1/16W Metal Oxide (Except VC-A598U)	AA
R671	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (Except VC-A598U)	AA
R674	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (Except VC-A598U)	AA
R675	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (Except VC-A598U)	AA
R676	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (Except VC-A598U)	AA
R677	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (Except VC-A598U)	AA
R685	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (Except VC-A598U)	AA
R686	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (Except VC-A598U)	AA
R691	VRD-RA2BE151J	V	150 1/8W Carbon (Except VC-A598U)	AA
R692	VRD-RA2BE151J	V	150 1/8W Carbon (Except VC-A598U)	AA
R703	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R704	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R705	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R706	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R707	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R708	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R709	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (Except VC-A598U)	AA
R710	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R711	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R712	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R713	VRS-CY1JF564J	V	560k 1/16W Metal Oxide (Except VC-A598U)	AA
R714	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R715	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R716	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R717	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R718	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R719	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R720	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A598U)	AA

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Main Unit (Continued)

Ref. No.	Part No.	★	Description	Code
R722	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R726	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R727	VRD-RA2EE151J	V	150 1/4W Carbon	AA
R728	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R729	VRD-RA2BE154J	V	150k 1/8W Carbon	AA
R731	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R732	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R734	VRD-RA2BE223J	V	22k 1/8W Carbon	AA
R735	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA
R736	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R737	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R738	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R739	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R740	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R741	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R742	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R743	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R744	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R745	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R746	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R748	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA
R750	VRS-CY1JF474J	V	470k 1/16W Metal Oxide	AA
R751	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R752	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R753	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R754	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R756	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R760	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R761	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R762	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
R763	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R764	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R765	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R768	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R770	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R772	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A598U)	AA
R773	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R774	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (Except VC-A598U)	AA
R776	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R777	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R779	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R780	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R781	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R782	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R783	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA
R784	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R785	VRS-CY1JF105J	V	1M 1/16W Metal Oxide	AA
R786	VRS-CY1JF564J	V	560k 1/16W Metal Oxide	AA
R787	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA
R788	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA
R791	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA
R794	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R795	VRD-RA2BE225J	V	2.2M 1/8W Carbon	AA
R796	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R798	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R813	VRD-RA2BE183J	V	18k 1/8W Carbon	AA
R814	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA
R815	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R821	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R822	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA
R823	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R824	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R825	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R826	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R832	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R833	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R834	VRD-RA2BE103J	V	10k 1/8W Carbon (Except VC-A598U/H995U)	AA
R841	VRD-RA2BE822J	V	8.2k 1/8W Carbon	AA
R843	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R845	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R846	VRD-RA2BE103J	V	10k 1/8W Carbon (VC-A598U/H995U)	AA
R847	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R848	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R851	VRD-RM2HD100J	V	10 1/2W Carbon (Except VC-A598U/H995U)	AA
R852	VRD-RA2BE331J	V	330 1/8W Carbon (Except VC-A598U/H995U)	AA
R862	VRD-RA2BE102J	V	1k 1/8W Carbon (Except VC-A598U)	AA
R863	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R864	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R865	VRS-CY1JF471J	V	470 1/16W Metal Oxide	AA
R866	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
⚠ R902	VRC-UB2HG275K		2.7M 1/2W Solid	AF
⚠ R904	VRS-VV3DB333J	V	33k 2W Metal Oxide	AA
⚠ R905	VRD-RM2HD154J	V	150k 1/2W Carbon	AA
⚠ R910	VRD-RM2HD390J	V	39 1/2W Carbon	AA
⚠ R912	VRD-RM2HD390J	V	39 1/2W Carbon	AA
⚠ R917	VRS-CY1JF562J	V	5.6k 1/16W Metal Oxide	AA
⚠ R921	VRS-CY1JF100J	V	10 1/16W Metal Oxide	AA
⚠ R922	VRS-CY1JF2R2J	V	2.2 1/16W Metal Oxide	AA
R923	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R924	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R930	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA
R931	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R932	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R933	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R934	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R951	VRD-RM2HD152J	V	1.5k 1/2W Carbon	AA
R952	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R954	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R955	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R957	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R958	VRD-RM2HD182J	V	1.8k 1/2W Carbon	AA
R959	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R960	VRN-VV3DB3R3J	V	3.3 2W Metal Film	AB
R973	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R974	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R981	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R982	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R986	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (Except VC-A598U)	AA
R987	VRS-CY1JF561J	V	560 1/16W Metal Oxide (Except VC-A598U)	AA
R991	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R992	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R993	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R7701	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R7704	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R7705	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
R7706	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R7707	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA

MISCELLANEOUS PARTS

⚠ ACC901	QACCD3049AJZZ	V	AC Coad	AN
⚠ F901	QFS-B3025CEZZ	V	Fuse, 3A/125V	AD
FB201	RBLN-0036CEZZ	V	Ferrite Bead	AB
FB202	RBLN-0036CEZZ	V	Ferrite Bead	AB
FB203	RBLN-0036CEZZ	V	Ferrite Bead	AB
FB701	RBLN-0036CEZZ	V	Ferrite Bead	AB
FB702	RBLN-0036CEZZ	V	Ferrite Bead	AB
⚠ FB901	RBLN-0036CEZZ	V	Ferrite Bead	AB
⚠ FB902	RBLN-0036CEZZ	V	Ferrite Bead	AB
⚠ FH901	QFSHD1013CEZZ	V	Fuse Holder	AC
⚠ FH902	QFSHD1014CEZZ	V	Fuse Holder	AC
J201	QJAKH0011AJZZ	V	Jack (VC-A598U)	AK
J201	QJAKL0006AJZZ	V	Jack (Except VC-A598U)	AL
J202	QJAKF0011AJZZ	V	Jack (VC-A598U)	AM
J202	QJAKG0005AJZZ	V	Jack (Except VC-A598U)	AN
P201	QPLGN0447REZZ	V	Plug, 4pin	AA
P701	QPLGZ0883GEZZ	J	Plug, 8pin (AC)	AD
P801	QPLGN0347REZZ	V	Plug, 3pin (VC-H998U)	AA

Ref. No.	Part No.	★	Description	Code

DUNTK5700TEV8/VL/VM/VN
Main Unit (Continued)

P803	QPLGZ0360GEZZ	J	Plug, 3pin (Except VC-A598U/H995U)	AB
RMC801	RRMCU0002AJZZ	V	Remote Receiver (VC-A598U)	AH
RMC801	RRMCU0062GEZZ	J	Remote Receiver (Except VC-A598U)	AG
S101	QSW-S0004AJZZ	V	RF Conv. Switch	AF
S701	QSW-F0042AJZZ	V	Rec Tip Switch	AG
S807	QSW-K0002AJZZ	V	Switch, CH DOWN	AD
S808	QSW-K0002AJZZ	V	Switch, MENU	AD
S809	QSW-K0002AJZZ	V	Switch, SET	AD
S810	QSW-K0002AJZZ	V	Switch, CH UP	AD
S811	QSW-K0002AJZZ	V	Switch, EJECT	AD
S813	QSW-K0002AJZZ	V	Switch, POWER	AD
SC301	QSOCN0611REN1	V	Socket, 6pin (AH) (VC-A598U)	AC
SC301	QSOCN0911REN1	V	Socket, 9pin (AH) (Except VC-A598U)	AD
SC601	QSOCN0695REZZ	V	Socket, 6pin (AA)	AB
SC602	QSOCZ0293GEZZ	J	Socket, 2pin (AE)	AC
SC701	QSOCN0795REZZ	V	Socket, 7pin (AD)	AC
SC702	QSOCZ0292GEZZ	J	Socket, 2pin (AL)	AC
SC801	QSOCZ0625CEZZ	V	Socket, 6pin (AO)	AC
TP141	QPLGN0262REZZ	V	Plug, 2pin(Except VC-A598U)	AB
TP801	QPLGN0262REZZ	V	Plug, 2pin	AB

DUNTK5701TEV1/V4
Operation Unit

RESISTORS

R881	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R882	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R883	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R884	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R885	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA

MISCELLANEOUS PARTS

P881	QPLGZ0626CEZZ	V	Plug, 6pin (OA)	AF
S881	QSW-Z0001AJZZ	V	Shuttle Switch (Except VC-A598U/H995U)	AQ
S882	QSW-K0002AJZZ	V	Switch, REC	AD
S883	QSW-K0002AJZZ	V	Switch, PAUSE/STILL	AD
S884	QSW-K0002AJZZ	V	Switch, PLAY	AD
S885	QSW-K0002AJZZ	V	Switch, STOP	AD
S886	QSW-K0070GEZZ	V	Switch, FF (VC-A598U/H995U)	AB
S887	QSW-K0070GEZZ	V	Switch, REW (VC-A598U/H995U)	AB

DUNTK5702TEV2
Box Control Unit

DIODES

D853	RH-PX0270GEZZ	J	Photodiode	AC
D854	RH-PX0270GEZZ	J	Photodiode	AC

MISCELLANEOUS PARTS

SC851	QSOCZ0360GEZZ	J	Socket, 3pin (FA)	AC

Ref. No.	Part No.	★	Description	Code

MECHANISM CHASSIS PARTS

1	LBNDK1011AJZZ	V	Tension Band Ass'y	AH
2	LBOSZ1007AJZZ	V	Tension Arm boss	AD
3	LBOSZ1006AJZZ	V	Cassette Stay L	AD
5	LCHSM0174AJZZ	V	Main Chassis Ass'y	AV
6	LHLDZ2016AJZZ	V	Loading Motor Block	AG
7	LPOLM0070GEZZ	J	Supply Pole Base Ass'y	AK
8	LPOLM0064GEZZ	J	Take-Up Pole Base Ass'y	AM
9	MLEVF0518AJZZ	V	Take-Up Loading Arm Ass'y	AF
10	MLEVF0519AJZZ	V	Supply Loading Arm Ass'y	AF
11	MLEVF0499AJZZ	V	Pinch Drive Lever Ass'y	AG
12	MLEVF0500GEZZ	J	Pinch Roller Lever Ass'y	AW
15	MLEVF0523AJZZ	V	Tension Arm Ass'y	AH
16	LANGF9620AJFW	V	A/C Head Plate	AG
17	MLEVP0271AJZZ	V	Sifter Drive Lever	AE
18	MLEVP0272AJZZ	V	Pinch Double Action Lever	AD
19	MLEVP0301AJZZ	V	Reverse Guide Lever Ass'y	AL
20	MLEVP0275AJZZ	V	Reverse Drive Lever	AD
21	MLEVP0292AJZZ	V	Slow Brake Lever	AE
22	MLEVP0290AJZZ	V	Open Lever	AD
23	MLEVP0293AJZZ	V	Clutch Lever	AE
24	MLEVP0324AJZZ	V	Sup Main Brake Ass'y	AF
25	MLEVP0325AJZZ	V	Take-Up Main Brake Ass'y	AF
26	CLEVP0287GEZZ	J	Auto Head Cleaner Ass'y	AG
27	MSLiP0010AJZZ	V	Sifter	AH
29	MSPRD0175AJFJ	V	Reverse Guide Spring 2	AE
30	MSPRT0402AJFJ	V	Loading Double Action Spring	AE
31	MSPRT0403AJFJ	V	Pinch Double Action Spring	AD
32	MSPRC0213AJFJ	V	Earth Spring	AC
33	MSPRT0416AJFJ	V	Tension Spring	AD
34	NBLTK0067AJ00	V	Reel Belt	AE
35	NDAiV1078AJ00	V	Reel Disk	AE
36	NGERH1293AJZZ	V	Loading Connect Gear	AD
37	NGERH1295AJ00	V	Master Cam	AE
38	NGERH1294AJZZ	V	Casecon Drive Gear	AD
39	NGERH1270AJZZ	V	Take-Up Loading Gear	AF
40	NGERH1271AJZZ	V	Supply Loading Gear	AD
41	NGERH1272AJZZ	V	Pinch Drive Cam	AE
43	NGERH1299AJZZ	V	Reel Relay Gear	AE
44	NGERW1070AJZZ	V	Worm Gear	AD
45	NGERW1066AJZZ	V	Worm Wheel Gear	AD
46	NiDR-0018AJZZ	V	Idler Wheel Ass'y	AK
47	NPLYV0162AJZZ	V	Motor Pully	AD
48	NPLYV0163AJZZ	V	Limitter Pulley Ass'y	AM
49	NROLP0131GEZZ	J	Guide Roller	AL
50	NSFTP0032AJZZ	V	Tension Pole Adjuster	AB
51	MSPRC0217AJFJ	V	Guide Roller Spring	AC
52	PREFL1011AJZZ	V	Light Guide	AE
53	QCNW-8022AJZZ	V	FFC for Drum Motor	AF
55	QCNW-8021AJZZ	V	FFC for A/C Head	AF
56	QPWBF5243AJZZ	V	A/C Head PWB	AE
57	QSOCN0605REN1	V	Socket, 6 pin	AB
58	RHEDT0036AJZZ	V	Full Erase Head	AM
59	RHEDU0088GEZZ	J	A/C Head Ass'y	AV
60	RMOTM1078GEZZ	J	Loading Motor	AP
61	RMOTN2055GEZZ	J	Capstan Motor	BA
62	RMOTP1139GEZZ	J	Drum Drive Motor	AT
63	DDRMW0029TEX1	V	Upper and lower drum Ass'y (VC-A598U)	BU
63	DDRMW0030TEX1	V	Upper and lower drum Ass'y (Except VC-A598U)	BU
65	QBRSK0041GEZZ	J	Drum Earth Brush	AD
66	XBPSD26P05J00	V	Drum Drive Motor Mounting Screw (SW2.6P+5S)	AA
67	PGIDC0056GEFW	J	Drum Base	AL
68	QPWBF5468AJZZ	V	PWB(LDG Motor)	AE

MECHANISM CHASSIS PARTS (Continued)

Ref. No.	Part No.	★	Description	Code
69	QPLGZ0292GEZZ	J	Socket(LDG Motor)	AE
70	MSPRC0223AJFJ	V	Azimuth Spring	AC
71	MSPRC0224AJFJ	V	Height Adjusting spring	AC

SCREW, NUTS AND WASHERS

Ref. No.	Part No.	★	Description	Code
201	XBPSD26P08000	V	Screw 2.6P+8S A/C Head	AA
202	LX-HZ3082GEZZ	J	WSW2.6+6 (AC)	AD
203	XHPSD26P06000	V	Screw, C2.6P+6S" (For Capstan Motor)	AA
207	XHPSD30P08WS0	V	Screw, C3.0P+8S" (For Drum Base)	AA
208	XRESJ30-06000	V	E-Ring, E-3"	AA
209	XWHJZ31-03052	V	Washer, W3.1-5.2-0.3"	AC
210	XWHJZ31-04052	V	Washer, W3.1-5.2-0.4"	AC
211	XWHJZ31-05052	V	Washer, W3.1-5.2-0.5"	AC
212	XWHJZ31-06052	V	Washer, W3.1-5.2-0.6"	AC
213	XWHJZ31-07052	V	Washer, W3.1-5.2-0.7"	AC
214	PSPAP0009AJZZ	V	Reverse Guide Adjusting Nut	AB
216	LX-WZ1041GE00	J	CW 2.6-6-0.5 CAM	AA
218	XBPSD30P08J00	V	Drum Base Mounting Screw (SW 3P+8S)	AA
219	LX-WZ1098GE00	J	CW 2.6-4.7-0.5 RED	AB
220	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
221	XBPSD26P06000	V	Azimuth Adjusting Screw 2.6+6S	AA
222	LX-BZ3197GEFD	J	Screw (A/C Head)	AD
223	XWHJZ31-08052	V	Washer, W3.1-5.2-0.8"	AC

CASSETTE HOUSING CONTROL PARTS

Ref. No.	Part No.	★	Description	Code
300	CHLDX3081TEV2	V	Cassette Housing Control Ass'y	AX
301	LANGF9592AJFW	V	Upper Plate	AL
302	LHLDX1028AJ00	V	Frame (L)	AH
303	LHLDX1032AJ00	V	Frame (R)	AH
304	LHLDX1030AJZZ	V	Holder (L)	AE
305	LHLDX1031AJZZ	V	Holder (R)	AE
306	MLEVF0469AJFW	V	Proof Lever (R)	AE
307	MLEVP0281AJ00	V	Door Open Lever	AD
308	MSLiF0076AJFW	V	Slider	AK
309	MSPRD0151AJFJ	V	Proof Lever (R) Spring	AB
310	MSPRD0166AJFJ	V	Drive Gear (R) Spring	AE
311	MSPRP0175AJFJ	V	Cassette Spring	AE
312	MSPRT0381AJFJ	V	Double Action Spring	AC
313	NGERH1278AJZZ	V	Drive Gear L	AE
314	NGERH1309AJZZ	V	Drive Gear R	AE
315	NGERR1008AJ00	V	Double Action Rack Gear	AE
316	NGERR3005AJFW	V	Drive Angle Gear	AG
317	NSFTD0041AJFD	V	Main Shaft	AH

CABINT PARTS

Ref. No.	Part No.	★	Description	Code
600	GCABA3131AJSM	V	Top Cabinet	AT
601	GCABB1207AJKB	V	Main Frame	AS
602	GCOVA2072AJKZ	V	Antenna Terminal Cover (VC-A598U)	AE
602	GCOVA2073AJKZ	V	Antenna Terminal Cover (Except VC-A598U)	AE
603	PSLDM4566AJFW	V	Shield Angle	AD
604	XHPSD26P06WS0	V	Screw	AA
605	XHPSD30P06WS0	V	Screw	AA
606	LANGK0197AJFW	V	Top Cabinet Fixing Angle	AG
607	XEPSD30P14XS0	V	Screw	AB
608	LX-HZ3047GEFF	J	Screw	AA
609	XEBSD30P12000	V	Screw	AA
610	LX-HZ3087GEFN	J	Screw	AB
611	PSLDM4562AJFW	V	H/A Shield Top	AF
612	LHLDZ1962AJ00	V	Sensor LED Cover	AD
613	PGUMS0026AJZZ	V	Foot Cushion	AB
614	TLABM3930AJZZ	V	Model Label (VC-A598U)	AC
614	TLABM3933AJZZ	V	Model Label (VC-H995U)	AC
614	TLABM3940AJZZ	V	Model Label (VC-H995U for Canada)	AC
614	TLABM3934AJZZ	V	Model Label (VC-H996U)	AC
614	TLABM3942AJZZ	V	Model Label (VC-H9977U for Canada)	AC
614	TLABM3941AJZZ	V	Model Label (VC-H997U for Canada)	AC
614	TLABM3935AJZZ	V	Model Label (VC-H998U)	AC
614	TLABM4028AJZZ	V	Model Label (VC-H998U for Canada)	AC
615	XJPSD30P10WS0	V	Screw	AA

FRONT PANEL PARTS

Ref. No.	Part No.	★	Description	Code
500	CPNLC2524TEV1	V	Front Panel Ass'y (VC-A598U)	AZ
500	CPNLC2527TEV1	V	Front Panel Ass'y (VC-H995U)	AY
500	CPNLC2528TEV1	V	Front Panel Ass'y (VC-H996U)	AZ
500	CPNLC2532TEV1	V	Front Panel Ass'y (VC-H9977U)	AZ
500	CPNLC2531TEV1	V	Front Panel Ass'y (VC-H997U)	AZ
500	CPNLC2529TEV1	V	Front Panel Ass'y (VC-H998U)	AZ
500-2	HBDGB1010AJSA	V	SHARP Badge	AG
500-3	HDECQ1971AJSA	V	Cassette Flap (VC-A598U)	AL
500-3	HDECQ1967AJSA	V	Cassette Flap (VC-H995U)	AH
500-3	HDECQ1972AJSA	V	Cassette Flap (VC-H996U/H997U)	AL
500-3	HDECQ1973AJSA	V	Cassette Flap (VC-H9977U/H998U)	AL
500-4	HDECQ1976AJSA	V	Window Dec. (Except VC-H9977U/H998U)	AN
500-4	HDECQ1978AJSA	V	Window Dec. (VC-H9977U)	AN
500-4	HDECQ1977AJSA	V	Window Dec. (VC-H998U)	AP
500-5	JBTN-2943AJSA	V	Button, REC (Except VC-H9977U/H998U)	AF
500-5	JBTN-2940AJSD	V	Button, REC (VC-H9977U/H998U)	AE
500-6	JBTN-2939AJSA	V	Button, SET-UP (Except VC-H9977U/H998U)	AF

FRONT PANEL PARTS (Continued)

Ref. No.	Part No.	★	Description	Code
500-6	JBTN-2941AJSA	V	Button, SET-UP (VC-H9977U/H998U)	AF
500-7	MSPRD0103AJFJ	V	Cassette Spring	AB
502		V	PLAY Button Ass'y (VC-A598U/H995U)	
502	CBTN-2845TEV1	V	PLAY Button Ass'y (Except VC-A598U/H995U)	AH
502-1	JBTN-2942AJSA	V	Button, PLAY (VC-A598U/H995U)	AH
502-1	JBTN-2845AJSB	V	Button, PLAY (Except VC-A598U/H995U)	AF
502-2	LHLDZ2066AJZZ	V	Button Holder (VC-A598U/H995U)	AG
502-2	LHLDZ2021AJZZ	V	Button Holder (Except VC-A598U/H995U)	AE
503	JKNBK1106AJSB	V	Knob (Except VC-A598U/H995U)	AG
504	TLABZ1574AJZZ	V	Feature Label	AH

SUPPLIED ACCESSORIES

ACCESSORIES

QCNW-0322AJZZ		V	75 ohm Coaxial Cable	AM
TINS-3523AJZZ		V	Operation Manual (VC-A598U/H995U)	AK
TINS-3527AJZZ		V	Operation Manual (VC-H995U for Canada)	AN
TINS-3524AJZZ		V	Operation Manual (VC-H996U/H998U)	AL
TINS-3528AJZZ		V	Operation Manual (VC-H9977U/H997U/H998U for Canada)	AP
RRMCG0237AJSA		V	Infrared Remote Control Unit (VC-A598U/H995U/ H996U)	AZ
RRMCG0263AJSA		V	Infrared Remote Control Unit (VC-H9977U/H997U)	BC
RRMCG1165AJSA		V	Infrared Remote Control Unit (VC-H998U)	BG

ACCESSORIES
(Not Replacement Item)

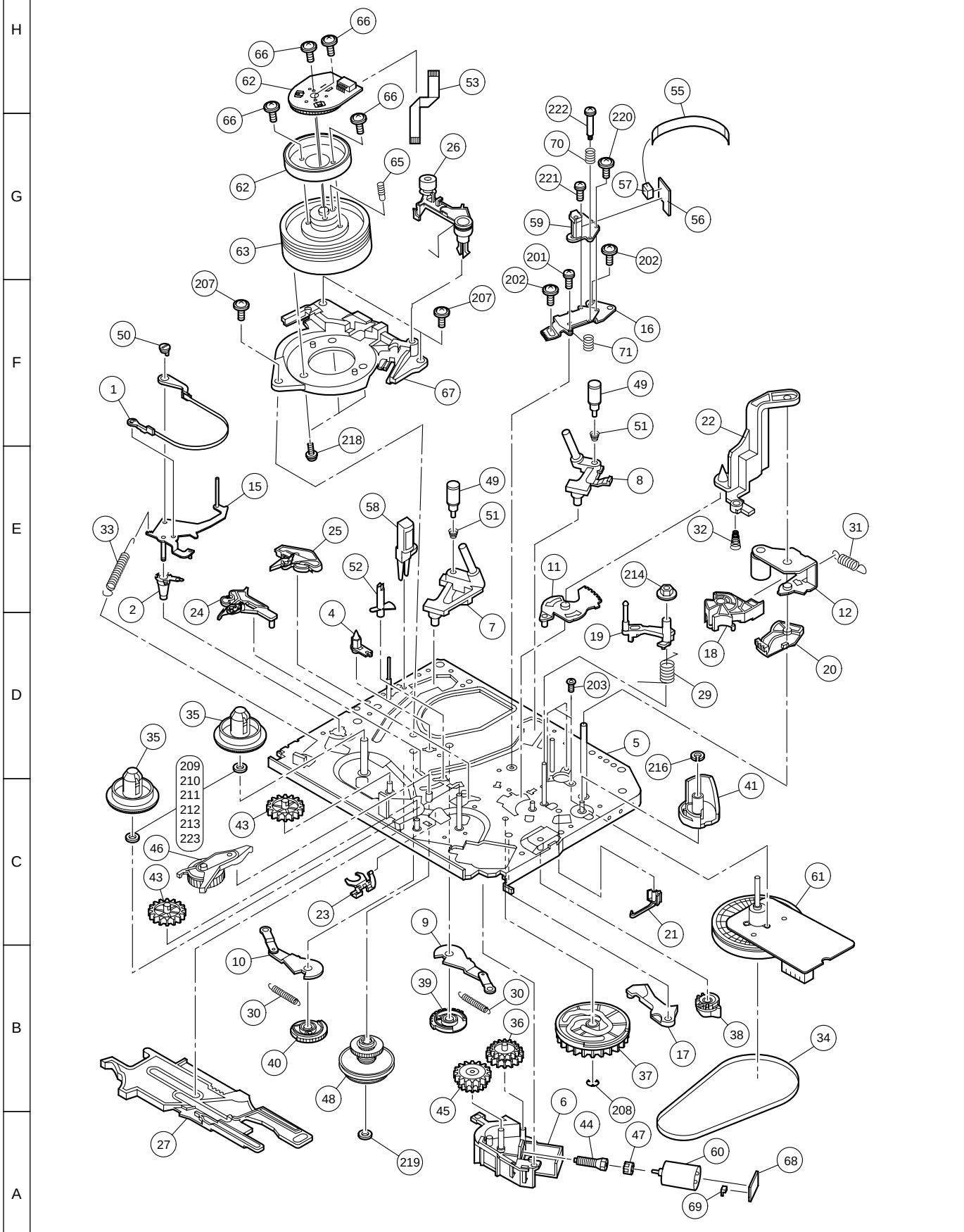
TCADH3051AJZZ	-	Timer Card (VC-A598U/H995U)	—
TCADH3052AJZZ	-	Timer Card (VC-H996U/H998U)	—
TCADH3053AJZZ	-	Timer Card (VC-H995U for Canada)	—
TCADH3054AJZZ	-	Timer Card (VC-H9977U/H997U/H998U for Canada)	—
TGAN-0001AJZZ	-	Guarantee Card (USA only)	—

PACKING PARTS
(NOT REPLACEMENT ITEM)

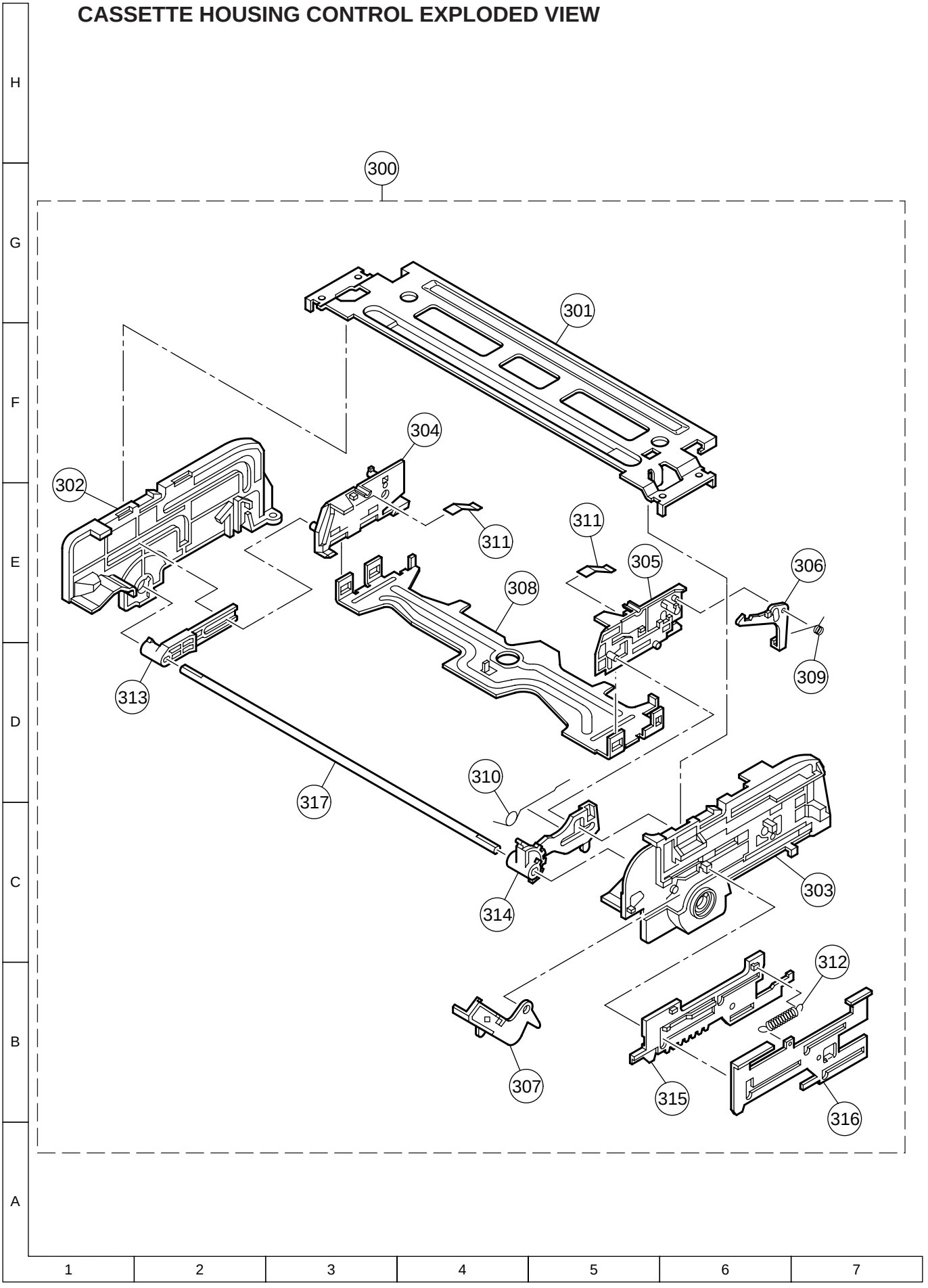
Ref. No.	Part No.	★	Description	Code
	SPAKC3968AJZZ	-	Packing Case (VC-A598U)	—
	SPAKC3971AJZZ	-	Packing Case (VC-H995U)	—
	SPAKC3972AJZZ	-	Packing Case (VC-H996U)	—
	SPAKC3973AJZZ	-	Packing Case (VC-H998U)	—
	SPAKC3975AJZZ	-	Packing Case (VC-H997U)	—
	SPAKC3976AJZZ	-	Packing Case (VC-H9977U)	—
	SPAKX1044AJZZ	-	Packing Foam	—
	SSAKA0001AJZZ	-	Polyethylene Bag	—
	SPAKP0114AJZZ	-	Foam Bag	—
	TLABK0005AJZZ	-	No. Label	—

11. EXPLODED VIEW

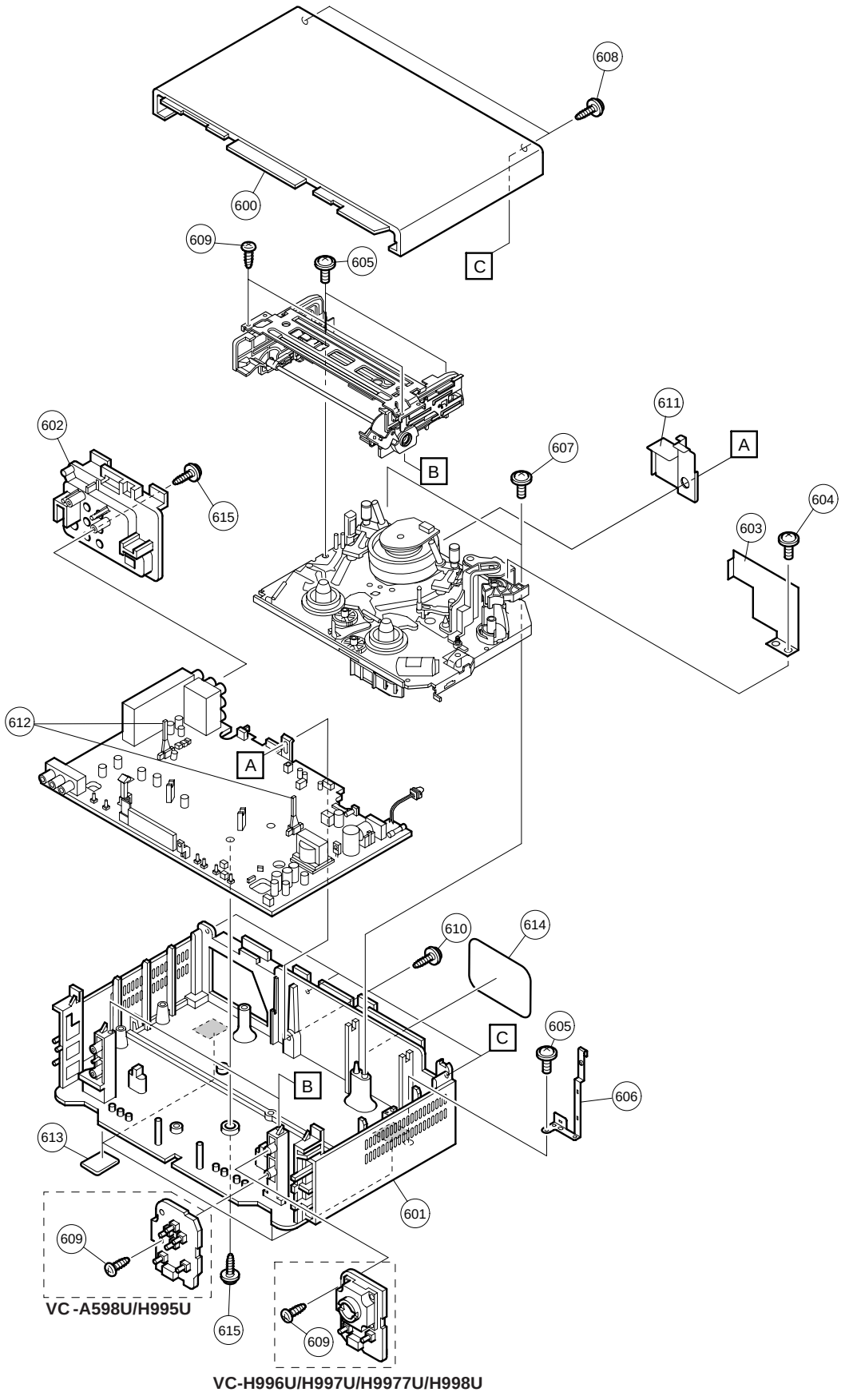
MECHANISM CHASSIS EXPLODED VIEW



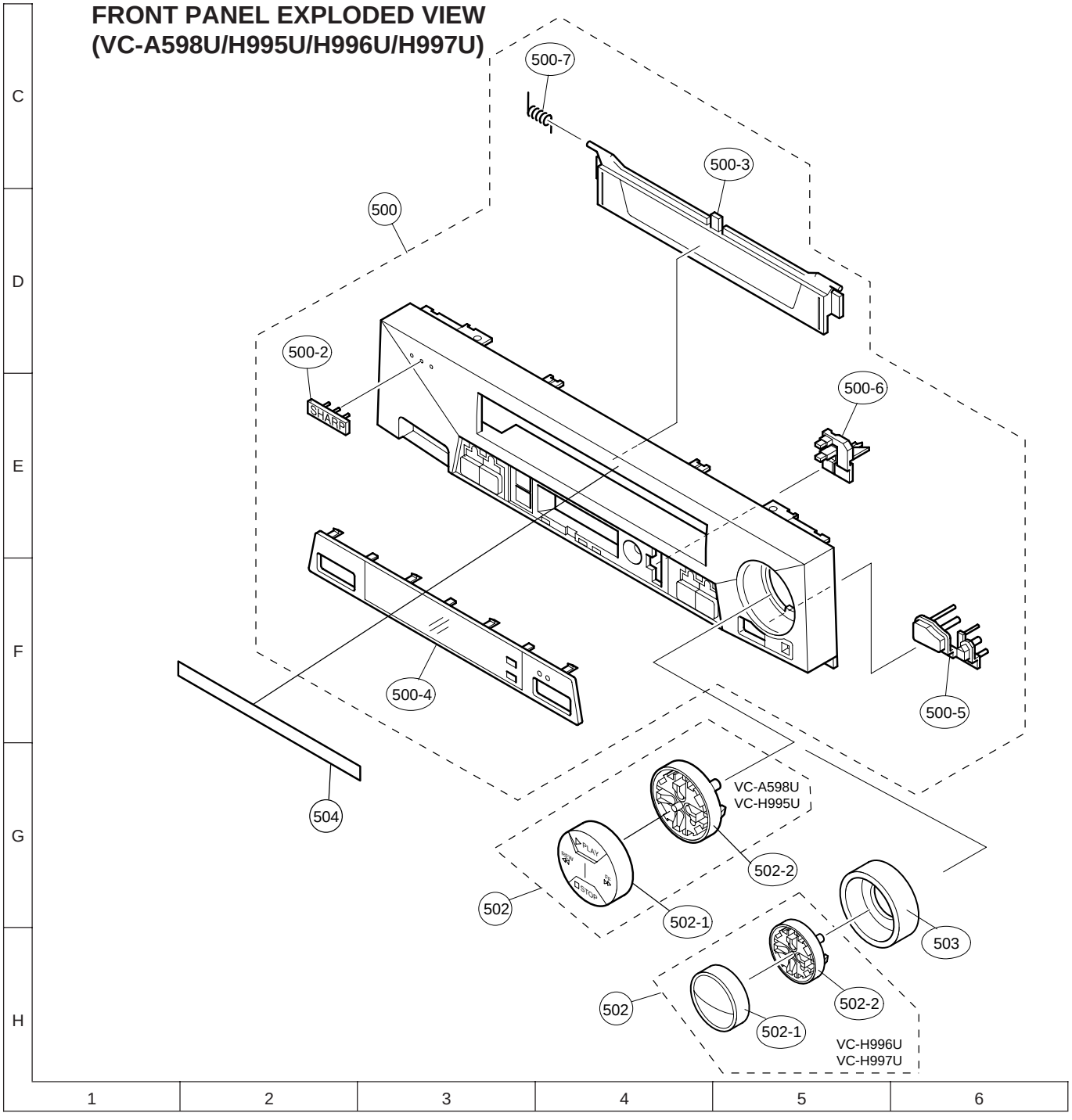
CASSETTE HOUSING CONTROL EXPLODED VIEW



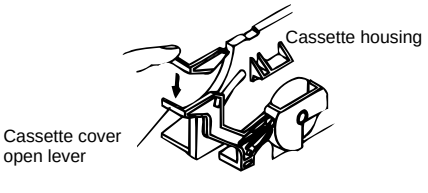
MECHANICAL EXPLODED VIEW



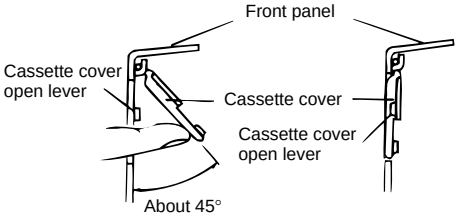
FRONT PANEL EXPLODED VIEW (VC-A598U/H995U/H996U/H997U)



PRECAUTION ON FRONT PANEL SET-UP

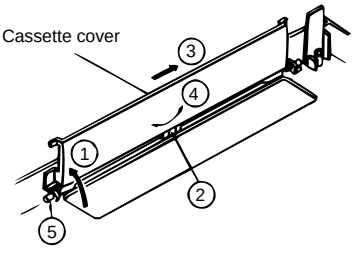


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.



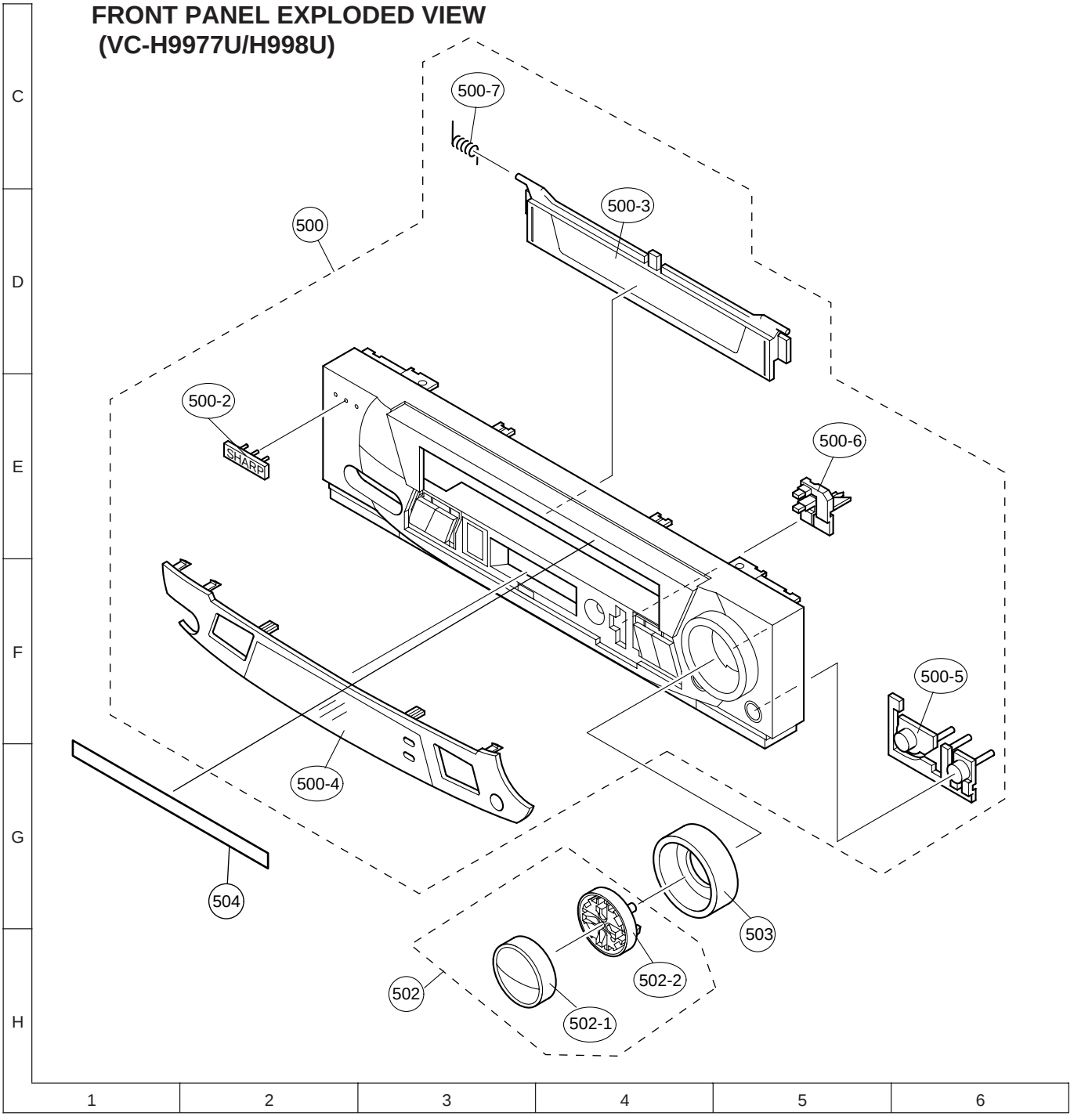
Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

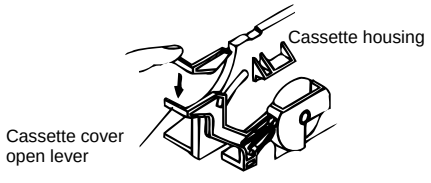


Removing the cassette compartment cover.
1 Open the cassette compartment cover fully.
2 Remove the center positioner.
3 Slide the cover to the right.
4 Slightly bend the cover.
5 Draw out the left-side rod.

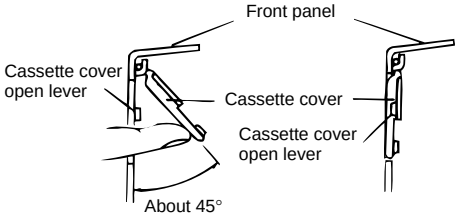
FRONT PANEL EXPLODED VIEW (VC-H9977U/H998U)



PRECAUTION ON FRONT PANEL SET-UP

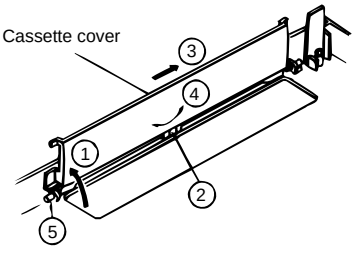


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.



Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.



Removing the cassette compartment cover.
1 Open the cassette compartment cover fully.
2 Remove the center positioner.
3 Slide the cover to the right.
4 Slightly bend the cover.
5 Draw out the left-side rod.

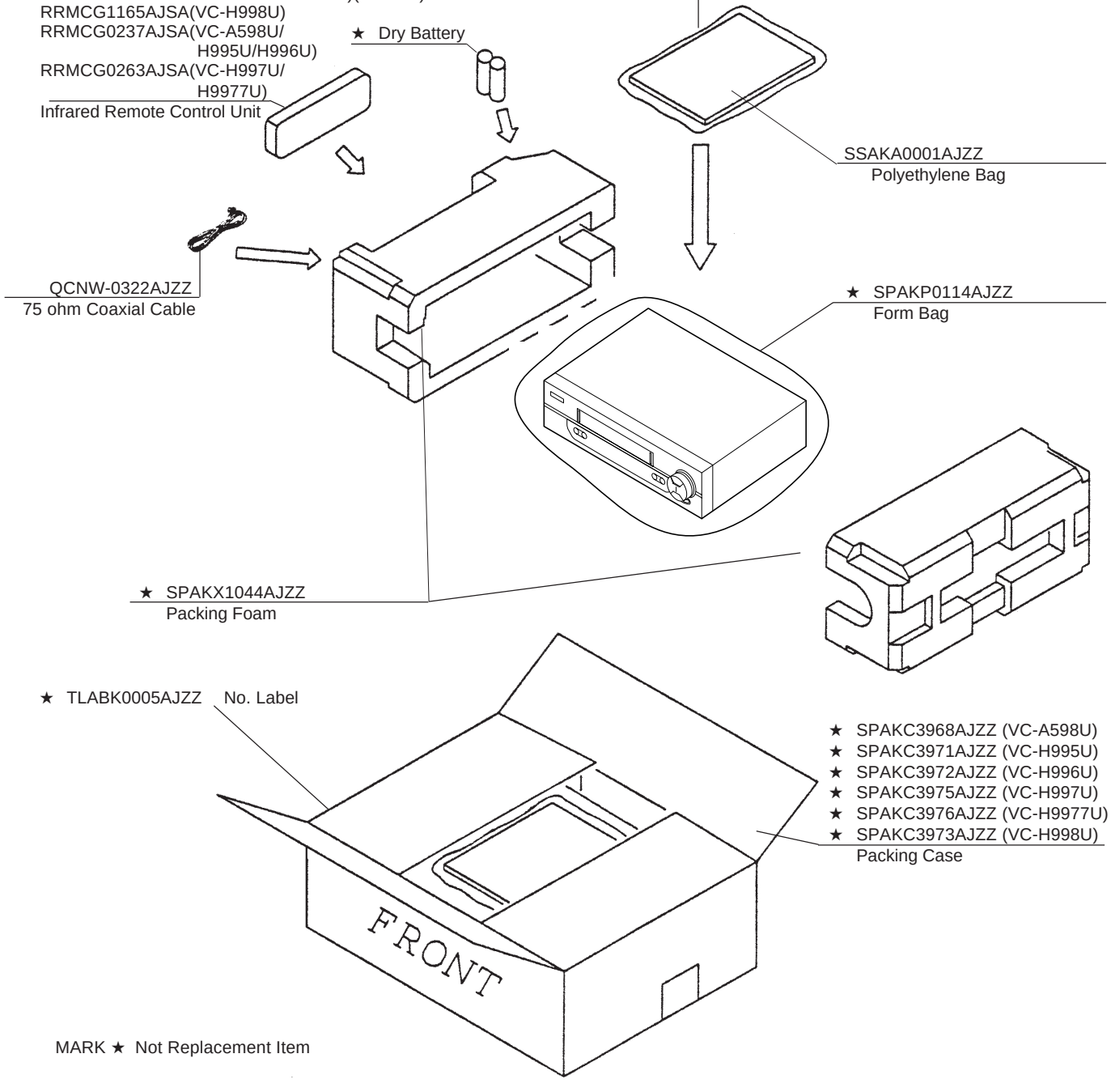
12. PACKING OF THE SET

■ Setting position of the Knobs

RF conv. CH. preset	at "3" channel

Accessories

TiNS-3523JZZ	Operation Manual (U.S.A.) (VC-A598U/H995U)
TiNS-3524AJZZ	Operation Manual (VC-H996U/H998U)
TiNS-3524AJZZ	Operation Manual (VC-H995U)(Canada)
TiNS-3524AJZZ	Operation Manual (VC-H997U/H9977U) (Canada)
★ TGAN-0001AJZZ	Guarantee Card (U.S.A only)
TCADH3051AJZZ	Timer Card(VC-A598U/H995U)(U.S.A.)
TCADH3052AJZZ	Timer Card(VC-H996U/H998U)(U.S.A.)
TCADH3053AJZZ	Timer Card(VC-H995U)(Canada)
TCADH3054AJZZ	Timer Card(VC-H997U/H9977U/ H998U)(Canada)



MARK ★ Not Replacement Item

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